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MEDICAL JOURNAL.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Nephrotomy.* By JOHN DUNCAN, M.A., F.R.C.S.E., Surgeon to the Royal Infirmary, Edinburgh.

SOME diseases of the kidney are coming within the domain of surgery. Matters are now in the same position as at one time they were with reference to disease of the ovary; operation is established as practicable, diagnosis is imperfect. It is proper, therefore, that cases should be published in detail which may in any way throw a little light on the points which are uncertain. During the winter semestre I have twice cut down upon the kidney.

J. B., æt. 46, was admitted to Ward xviii., on the recommendation of Dr Muirhead, 9th November 1880.

Personal History.—About the age of 19, while serving his apprenticeship as a bottle-blower, he was for six weeks laid up with pain in the chest, and cough. On the recommendation of his medical attendant he employed himself otherwise for a time, and, inasmuch as the resumption of his former occupation brought about a recurrence of his illness, he ultimately gave up bottle-blowing altogether. For two or three years after his marriage he was again subject to cough, but since that attack, now twelve years ago, he has been quite free from any respiratory trouble.

Family History.—His eldest sister died of consumption, æt. 32. Otherwise the family history is good.

Present Condition.—He looks sallow and emaciated: height 5 ft. 7 in.; weight 120 lbs.; temperature normal. There is slight emphysema, chiefly of the right lung. The digestive system is healthy, but easily deranged.

Present Disease.—About fifteen years ago he began to feel a dull, aching pain in the left lumbar region, which gradually became more continuous and severe. Twelve years ago he was lifting a heavy bar with three others, when the man next him suddenly let go. He was nearly brought to the ground, and immediately felt a sharp pain in the region previously affected. That night his urine was bloody. Since that time he has never been quite well. In the morning he would rise tolerably free from pain, and generally passed without trouble urine of normal appearance and quantity. As the day's work went on he would get soon fatigued, pain in the back would come on and increase, the urine become small in amount, high-coloured, and scalding. If the work was severe, the pain in the left lumbar region was excessive; it shot down into the left testicle, and the parts affected by it became slightly tender on pressure, and he thinks somewhat swollen. On these occasions the urine would become bloody, and he would be troubled with flatulence, vomiting, and palpitation. Rest invariably relieves. Thus he was an inmate of the Infirmary six years ago. He was then sounded for stone, but as none was found, he had a plaister applied to the back, and was kept in bed for a time. He improved greatly, but relapsed on resuming work.

In Dr Muirhead's wards he has also decidedly improved.

Nov. 30.—Since admission the temperature has varied between 98° and 99°; the urine between 70 and 90 ounces per diem. The urine (sp. gr. from 1012 to 1020) invariably contains phosphates and a little pus. There has been neither blood, sugar, nor albumen. The pain has not been severe, except once, on 17th Nov., after carrying a heavy weight of slops. No swelling can be detected, but there is slight tenderness on deep pressure in the left lumbar region. To-day I made a horizontal incision midway between the last rib and the iliac crest, and easily reached the kidney. No calculus could be felt, on careful manipulation, either in the kidney or as far down as the ureter could be distinguished. As it was difficult to touch the upper part of the kidney, I passed my finger between the eleventh and twelfth ribs. Every portion of the organ was then carefully examined, but not the slightest abnormality could be detected. After operation the temperature remained normal, the wound aseptic, and he was sent to the Convalescent Home in three weeks. On his return seven weeks after the operation he reported that the pain was still felt, and that although he was very well while in bed after the operation, he did not think his condition now much better than before the incision. He was again admitted under Dr Muirhead's care, and the continuous current of electricity was applied. He left the Infirmary after three weeks, greatly improved, and we have heard from him, March 1881, that he has been working for some time, and that the pain has almost disappeared.

Even now, on looking back on the case, one cannot help thinking that the diagnosis of calculus in the kidney was amply justified. A chronic pyelitis there must have been, but it is equally certain that there was no stone in the pelvis of the kidney. I do not think it impossible that a small stone embedded in the substance of the organ might escape detection, although it must assuredly have been very small.

My second case was very different in character.

Barbara B., æt. 32, was admitted, on the recommendation of Dr Balfour, 31st January 1881. The family and personal history was very good. In June 1880, after the birth of her last child, she was very ill, the most distressing symptoms being pain in the bladder, frequent micturition, and hæmaturia. Shortly afterwards persistent diarrhœa came on, and she began to feel pain in the left lumbar region. Five weeks ago the lumbar pain suddenly became very severe, while the symptoms of cystitis simultaneously greatly improved. As she was rapidly getting worse, she put herself under Dr Balfour's care on 24th January 1881. She was then so weak that her medical attendant thought she would not survive the journey from Fife.

On admission to the surgical ward there was found to be great tenderness and considerable swelling in the region of the left kidney. Obscure fluctuation could also be made out.

Two days after admission I aspirated the swelling, and obtained two ounces of pus. Using the canula of the aspirator as a probe, I distinctly felt a rough, hard body. At the time I stated to the class that I had, therefore, little doubt of the presence of a calculus, but that, looking to the position of the canula, and the possibility that the abscess was perinephritic, we must not leave out of account the idea that what was felt might be a vertebral process. Little relief was given by aspiration. The only point that therefore remained for consideration was, whether in her condition of weakness and fever she would be able to bear further interference. It was evident that she could not long survive in her present condition, while it was not unlikely that free drainage might be followed by marked relief. On the 8th of February I dissected down past the edge of the erector spinæ, and opened a perinephritic abscess cavity. From it an opening sufficient to admit the forefinger passed into the kidney, which was simply a bag of caseous matter. There was no calculus, but a small portion of a transverse process had been eroded by the abscess. The idea of attempting to remove the caseous kidney was negatived by the exhausted condition of the patient, and I contented myself by passing a large drainage-tube into it. Pain was relieved by the operation, but the woman gradually sank exhausted, and died five days after operation.

At the sectio there were found, in addition to the caseous abscess of the kidney, a cheesy mass between the pleura and the 4th, 5th, and 6th ribs on the right side, and several cheesy nodules in the lungs, surrounded by groups of gray tuberculous nodules.

Many of the viscera were waxy.

The case was very probably pyæmic in its character.

It would not be easy to decide whether the bladder or the kidney was the original seat of the urinary trouble. The healthy condition of the other kidney and the bladder, and the fact that the bladder symptoms improved coincidently with abscess formation round the kidney, point to a nephritic origin. Two points of interest in connexion with the case deserve consideration. The pus in the perinephritic abscess was found to swarm with micrococci. The source of fallacy in examining the kidney for calculus by means of a long needle, as has been proposed, is distinctly worth remembering.

ARTICLE II.—*On the Actions and Uses of Citrate of Caffein as a Diuretic.* By DAVID J. BRAKENRIDGE, M.D., F.R.C.P.E., Physician to the Royal Infirmary, and Lecturer on Clinical Medicine, Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh*, 1*st June* 1881.)

CAFFEIN, the active principle of tea, coffee, cocoa, and guarana, is a very potent substance, the physiological actions of which, in both toxic and therapeutic doses, have received much attention of late years.

On many points, however, the results obtained by different experimenters are very conflicting. I will therefore avoid all discussion of these disputed points at present. The only well-established fact which we have until recently been able to turn to therapeutical account is that caffein is a powerful cerebral stimulant. Hence its chief use, apart from its popular employment in the familiar beverages which contain it, has been as a remedy in nervous headache and opium poisoning.

In January 1879, Dr Lewis Shapter, in a paper in the *Practitioner*, first directed special attention in this country to the citrate of caffein as a diuretic in cases of cardiac dropsy. He, however, acknowledges his indebtedness to Professor Gubler, who had previously shown that the citrate or bromhydrate of caffein, in doses of gr. iv. to gr. viij., given either hypodermically or by the mouth, induces abundant and instantaneous diuresis in such cases.

During the past eighteen months I have prescribed this drug in a large number of cases of cardiac and renal dropsy, both in the wards of the Edinburgh Royal Infirmary and in private practice, and the results which I have obtained have been for the most part confirmatory of the favourable results obtained by these observers, and more recently by Dr Leech.[1]

Some time after commencing the use of the drug, however, I began to fear that it was likely to prove one of those uncertain remedies which, frequently failing us altogether at a critical moment, we learn after a time to discard as untrustworthy, and that I would have to acquiesce in the verdict of Dr Leech, who qualifies his otherwise highly favourable opinion with these words: "Most drugs are found to act differently on different individuals, but caffein is specially variable in its effects."

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[1] *Practitioner*, 1880.

A more careful study, however, of the circumstances under which these failures and variations in the action of the drug have occurred has led me to reverse this unfavourable opinion.

Citrate of caffein has, I believe, a special action, being chiefly a stimulant of the renal glandular epithelium, and very slightly, if at all, a vascular diuretic. It has, therefore, a special and limited place as a diuretic. Acting upon this view of its action, I have never been disappointed in obtaining a marked increase in the flow of urine by its proper employment in suitable cases, and, when necessary, suitably combined with other drugs. But I am afraid it will be impossible to understand the special action claimed for the drug unless we recall to mind the anatomical arrangements in the kidney provided for the separation of the urine, and also the main points bearing on our present subject of what is known regarding the physiology of the process, and especially regarding the part played in it by the renal glandular epithelium.

In this I will purposely, to avoid controversy, confine myself to those physiological data which are accepted as important by most of our leading authorities, although I will draw from these data some warrantable conclusions which appear to me essential to the proper understanding of diuresis and the actions of diuretic drugs. The anatomical arrangements in the kidney for the separation and modification of the urine are threefold, provision being made for—1st, Filtration; 2d, Diffusion; 3d, True Secretion.

First, In each glomerulus, which consists of a cluster of small bloodvessels, the afferent vessel of which is larger than the efferent, and which is enclosed in a capsule, the dilated commencement of a tubulus uriniferus, we have a structure admirably adapted for filtration.

Secondly, In the tubulus uriniferus, which consists of a basement membrane having on the outside applied to it the capillary plexus into which the efferent vessel from the corresponding glomerulus has divided, and on the inside the renal epithelium, provision is made whereby diffusion may readily take place between the urine in the tubule and the blood in the surrounding vessels.

It must be remembered in this connexion that the tubules are further surrounded—according to Ludwig—by lymphatic spaces which freely communicate with one another.

Thirdly, In the glandular epithelium which lines a considerable portion of the tubulus uriniferus,—especially the convoluted cortical portion,—and which in its anatomical characters closely resembles the glandular epithelium of purely secretory organs, we have a structure whose function may *a priori* be expected to be truly secretory.

Physiological experiments and observations have for the most part tended to confirm the views regarding the functions of the kidneys thus suggested by these anatomical arrangements.

I can only briefly summarize what is at present known on the subject.

First, In the Malpighian body, filtration from the blood in the glomerulus of water containing the soluble constituents of the urine, in proportions definitely related to those in which they pre-exist in the blood, takes place into the capsular dilatation of the tubulus uriniferus.

Other things being equal, the amount of urine thus separated by filtration varies directly with the blood-pressure in the glomerulus. The variations in this blood-pressure—as is well known—depend upon either general or local causes, which I need not detail here.

Second, Diffusion must take place in the tubulus uriniferus; for all the conditions present are such as to favour the passage of water from the urine in the tubule into the veins surrounding it.

a. It is well known that alkaline solutions produce positive osmosis or endosmosis, whereas acid solutions produce negative osmosis or exosmosis. Now the urine in the tubule is acid, whereas the blood in the surrounding venous plexus is alkaline; hence we have here conditions which doubly favour the passage of water from the urine to the blood.

b. Water tends to pass by diffusion from the less concentrated to the more concentrated fluid. In this case the very dilute urine filtered from the glomerulus is much less concentrated than the blood in the venous plexus from which it has just been filtered. Hence, for these reasons, a considerable proportion of water passes from the urine in the tubulus back into the blood in the surrounding vessels. The excrementitious urine thus rendered more concentrated passes onwards through the various urinary channels out of the body.

Third, That these purely physical processes do not, as was maintained by Ludwig, entirely explain the secretion of urine, and that the function of the renal epithelium is truly secretory, is *a priori*, from the anatomical standpoint, highly probable. But many facts render this almost certain. For example, disease of the renal epithelial cells seriously interferes with secretion. In birds, uric acid deposits are seen to originate within the cells, the disintegration of which seems necessary before the deposit can become free. After urate of sodium has been injected into the blood the same thing has been observed. Much experimental evidence may be adduced to show that the renal glandular epithelium is a true secreting structure.

It has been demonstrated that when arrest of the natural flow of urine has been caused by section of the spinal cord below the medulla, and consequent lowering of the general blood-pressure, a copious flow of *urine* can be induced by the injection into the blood of such substances as urea, urates, etc.

According to C. Ustimowitsch, "this secretion is *unaccompanied by any rise of blood-pressure sufficient to account for the flow on any filtration hypothesis.*" By experiments performed in a similar manner, Heidenhain, who, instead of urea, used indigo-carmine, demonstrated the passage of the pigment through the glandular cells into the channel of the tubule, where it was precipitated in a solid form. This substance, towards which the renal epithelial cells would seem to exert a special secretory selective activity, is well suited for experiment, as it excites no secretion of urine, and thus is not washed away, and can be traced in its progress through the cells.

Henschen[1] and Paulynski[2] have each recently published independent experiments which seem to throw some doubt upon the accuracy of Heidenhain's observations and conclusions, and to indicate that the pigment is separated by filtration, its appearance in the epithelial cells being due to reabsorption. Both observations may be, and probably are, correct; for if, as Heidenhain stated, in his experiments the flow of urine in the kidney was completely arrested by section of the spinal cord, filtration was impossible; whereas if, as is admitted, in Henschen and Paulynski's experiments filtration took place, then the indigo-carmine would certainly be filtered from the glomeruli along with the other soluble constituents of the urine. We have fortunately, however, evidence more conclusive even than that of Heidenhain.

To determine the functions of the two chief divisions of the renal secretory apparatus, Nussbaum experimented on a class of animals in which the blood-supply to the glomeruli is quite distinct from that which supplies the glandular epithelium. In the amphibia the glomeruli receive their blood-supply from the renal artery, whereas the plexus around the tubuli uriniferi is formed by branches which come from a totally different source, viz., one of the two branches into which the femoral vein divides at the top of the thigh. The small efferent vessels from the glomeruli certainly terminate in the so-called "renal portal-plexus," but "actual observation of the kidney of the newt has shown that when the renal artery is tied the blood is shut off from the glomeruli, and not the slightest reflux takes place from the capillary network surrounding the tubules to the glomeruli."[3] The kidney is thus converted into an ordinary secreting gland.

Nussbaum's experiments, performed upon such a kidney, have thrown much light upon the functions of that organ. For our present purpose it is sufficient to state that, having tied the renal artery, and thus completely cut off the blood-supply from the glomeruli, he found that, if urea be injected into the blood, a secretion of *urea* and *urine* takes place. He further injected indigo-carmine into the blood, and found, as Heidenhain had previously shown, that it is separated by the epithelial cells, where filtration is impossible.

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[1] *Akademisk Afhandling för Medicinska Graden*, Stockholm, 1879, p. 166.

[2] Virchow's *Archiv*, Band LXXIX., p. 393.

[3] Foster's *Physiology*, p. 376.

Leaving out of consideration for the present the process of diffusion by which the urine, already separated, merely undergoes concentration, from the foregoing evidence we must conclude—

1st, That the glomerulus forms an excellent filtering mechanism, whereby the water and soluble constituents of the urine are, under the influence of blood-pressure, separated from the blood.

2d, That the renal glandular epithelium is a true secreting structure, possessing the power of separating from the urine, urea, uric acid, water, and probably other constituents of normal urine.

3d, That certain substances, *e.g.*, urea, possess the power of causing increased activity of the epithelial cells.

4th, That each of these two structures in the kidney, whereby urine is separated from the blood, possesses the conditions necessary for the separation of the constituents of normal urine.

5th, That in the one, the glomerulus, the process is purely physical, viz., by filtration. In the other, the epithelium, it implies a special glandular selective activity.

Hence we may assume that in health, when the blood-pressure and the renal glandular epithelium are both normal, the greater amount of urinary water, holding in solution the soluble constituents of urine in proportions bearing a definite relation to those in which they pre-exist in the blood of the renal artery, is separated from that fluid by filtration in the Malpighian bodies. But a purely physical process, whereby certain soluble substances are separated in purely physical proportions, can never free the blood from each of its impurities in those exact amounts which alone will satisfy the requirements necessary for the maintenance of health. Hence, for the glandular selective function of the renal epithelium is reserved the higher and nicer work of further removing from the blood, in the exact proportions of each necessary for the maintenance of health, those substances which have escaped filtration, and whose retention would be injurious. By this beautiful arrangement the greater but rougher amount of the work is accomplished by the simpler process of filtration, while the lesser but finer and more exact part of the work is done by the higher process of true secretion.

It is evident, then, that these filtering and secreting organs bear a complementary relation to one another, and that the amount of work done by the one must vary inversely with the work done by the other. Thus, on the one hand, the more the urine that is separated by filtration, the less urea, water, etc., will reach the glandular epithelium to be separated by it; and the less the separation of urine in the Malpighian bodies, owing to a fall in the blood-pressure or otherwise, the more urea, urinary water, etc., will reach the glandular renal epithelium and stimulate its secretory activity. Whereas, on the other hand, if the glandular epithelium be either diseased or exhausted, and less urea, uric acid, etc., be thus separated by it, these, accumulating in the blood, will consequently, in proportionally larger quantities, be filtered from that fluid in the glomeruli. Within the limits of health, the amount of work done by each of these chief factors in the separation of urine must vary constantly and considerably; and when we pass beyond the limits of health the modifications in the balance may become much greater.

From the foregoing facts we may draw the following conclusions:—

1*st*, When the blood-pressure in the glomeruli of the kidney is abnormally lowered, or when thus or from any other cause, such as increased pressure of urine in the capsules, filtration is interfered with, the amount of urine separated in the Malpighian bodies will be proportionally diminished.

2*d*, That, consequently, the solid constituents of the urine will thereby be insufficiently removed from the blood by filtration, and hence will be presented in increased amount to the renal glandular epithelium.

3*d*, That urea, and probably the other constituents of the urine which it is the function of the renal epithelium to separate from the blood, being stimulants of the secretory epithelium, their presence in increased amount will augment the activity of the glandular cells, and cause increased secretion by them, not only of urea, uric acid, etc., but also of water.

4*th*, That thus, in many cases of advanced heart disease, for example, there must take place in time a gradual transference of work from the glomeruli to the secreting epithelial cells, the latter coming, as the blood-pressure is lowered, to take upon them the secretion of more of the urinary water, as well as such solid constituents as urea, uric acid, etc.

5*th*, That this transference of work is not necessarily indicated by the amount or constitution of the urine passed.

For example, take two cases in each of which 20 oz. of urine are passed in the twenty-four hours. In the one the greater amount of the urine may be filtered from the blood in the glomeruli as the result of blood-pressure; in the other it may be secreted by the renal epithelial cells as the result of excessive stimulation from retention in the blood which reaches them of such substances as urea, urates, etc. This fluctuating balance of work between filtration and secretion explains many of the anomalies in the action of diuretic remedies, and for the proper selection and employment of these it seems to us important that we should not only bear it in mind, but determine as far as possible in each case its actual state.

In the foregoing remarks I have assumed that the amount of blood passing through the kidneys has been in all cases the same. It must not, however, be forgotten that the amount of urine secreted by the kidney will, other things being equal, vary directly with the amount of blood which passes through that organ.

Neither blood-pressure in the glomeruli nor secretory activity in the glandular epithelial cells can separate from the blood more urine than it contains. Hence the amount of urine must always be further conditioned by the amount of blood which circulates through the organ.

It is thus clear that drugs may increase the amount of the urine in some one or more of the following ways:—

1st, By increasing the blood-pressure in the glomeruli.

2d, By increasing the rapidity of the circulation in, and the amount of blood passing through the kidneys.

3d, By stimulating the renal glandular epithelium.

4th, By modifying the process of diffusion in the kidneys or in the body elsewhere.

There is no reason to believe that in the large increase of urine caused by citrate of caffein modification of osmosis plays any part, and therefore I will not further discuss it at present, although I have little doubt that some of the saline diuretics, *e.g.*, acetate of potash, act partly at least in this manner. The purely vascular diuretics act both by increasing the blood-pressure in the glomeruli and by increasing the amount of blood passed through the kidney.

Digitalis may be regarded as the type of the class of vascular diuretics. Digitalis increases diuresis by increasing arterial tension and the amount of blood flowing through the kidneys. It "has," says Binz, "no directly stimulating effect on the secretory function of the kidneys," although it may, by thus improving the nutrition of the glandular epithelium, indirectly increase its secretory power and activity. But there is abundant evidence to show that such a purely vascular diuretic as digitalis may, in certain cases, be quite powerless, when given alone, to produce any very marked diuresis.

The fact is quite familiar to every practitioner that digitalis in combination with other drugs will often prove successful where, given alone, it had signally failed. The probability is that many of those drugs which thus increase the action of digitalis act upon the secretory structures of the kidney in some manner quite different from digitalis, either by stimulating the glandular epithelium or by modifying the osmotic processes in the kidney or in the body.

Could we say with certainty of a given diuretic that it is a stimulant of the renal glandular epithelium, we might also predict with certainty of it that it would, on the one hand, increase the diuretic effect of digitalis, and that, on the other hand, its diuretic effect would be increased by digitalis. We would further be enabled to judge when one or other or both drugs might be administered safely and with advantage.

Now, various facts brought out in my clinical experience of citrate of caffein as a diuretic have led me to believe that the diuretic action of this drug is due, *for the most part*, to a power which it possesses of stimulating the renal glandular epithelium.

(*To be continued.*)

ARTICLE III.—*On a Case of Bilateral Paralysis of the Vocal Cords, with special reference to Diagnosis: being Portion of a Clinical Lecture delivered in the Western Infirmary of Glasgow, 25th March* 1881. By Dr M'CALL ANDERSON, Professor of Clinical Medicine in the University of Glasgow.

THE patient who now appears before you has reached the lecture-room with the greatest difficulty, on account of severe dyspnœa, which, however, troubles him only on exertion, and it shall be our aim this morning to endeavour to make out the cause of this and of other striking symptoms which he presents. He is a moulder, æt. 49, who, on his admission on the 16th March, complained chiefly of cough, difficulty of breathing, and inability to speak above a whisper, symptoms which set in about six months ago.

The family history is good; his mother is upwards of 80 years of age; five brothers are alive and well; one died at the age of 19 of smallpox, and his father at 74, consequent upon an accident.

He has always been a healthy man hitherto, has never suffered from venereal disease, and has been temperate in his habits. About half a year ago, as the result, he thinks, of severe drenchings and exposure to draughts, be became slightly hoarse, and in a day or two this was accompanied by some cough. He says that it was not like an "ordinary cold," but seemed to be due to some irritation in the throat, and he indicated the seat of irritation by pointing to the larynx. The hoarseness gradually became more pronounced, until he found it impossible to speak above a whisper, and two months ago the cough became more severe, and accompanied by slight mucous expectoration. Latterly he has been complaining of weakness and some loss of flesh, and exertion of any kind produces great dyspnœa.

Two months ago he consulted Dr Foulis, who treated him by means of the induced current to the interior of the larynx, and perhaps with some slight benefit, at first at least. On examining our patient we find that he is weak and has lost a good deal of flesh, but that his disease is unaccompanied by fever, the temperature being uniformly normal. When at rest he breathes quietly and with perfect freedom, but on exertion the breathing becomes stridulous, and there is great dyspnœa. He speaks, too, with manifest effort, and scarcely above a whisper; and his cough is hoarse, and accompanied by slight frothy expectoration.

From these symptoms the experienced observer might have a shrewd suspicion of the general character of the lesion which produced them, but certainty could not be attained without a laryngoscopic examination, which shows that both vocal cords are paralyzed. There are three forms of bilateral paralysis:—

1. *Paralysis of the Abductors,* in which condition the vocal cords do not separate on inspiration. This is the paralysis of the vocal cords "with central fixture" of Mackenzie; it is generally the result of a cerebral lesion, and demands a prompt resort to tracheotomy, else the patient is very apt to die of suffocation.

2. *Paralysis of the Adductors,* when the vocal cords are widely open, and do not approximate on phonation—Mackenzie's "bilateral paralysis with lateral fixture." This condition is most frequently met with in hysterical subjects, and is then to be relieved by the direct application of the induced current to the vocal cords.

3. *Paralysis of both Abductors and Adductors,* when the vocal cords remain in the "cadaveric position," *i.e.*, midway between complete closure and complete opening of the glottis. This last is probably the rarest variety of all, and it is that which is present in our patient. Apart from the laryngoscopic examination, the symptoms which he presents are quite in accordance with those which are usual in such cases, as the following quotation from Morell Mackenzie's admirable work on *Diseases of the Throat and Nose* shows[1]:—"No dyspnœa is present in such cases" (when at rest, I presume he means), "and the voice may be weak or reduced to an almost inaudible whisper. In any case there is constant waste of breath present, and speaking is attended by a great increase in the amount of effort normally required, the excessive size of the glottis necessitating a greater degree of pressure to throw the vocal cords into vibration. The muscles of expiration, especially the abdominal, are therefore unusually strained, discomfort is felt at their thoracic attachments, and the patient quickly becomes exhausted. He cannot cough, expectorate, or speak properly, because in these acts it is necessary to close the glottis, and this he cannot accomplish. On forced inspiration a stridulous sound is often produced, which appears to depend on the arytenoid cartilages, the ary-epiglottic folds or flaccid vocal cords being thrown into coarse vibrations."

So far our diagnosis is perfectly clear; but a still more important, and often more difficult, question remains to be considered, viz., the cause of the paralysis, and the *nature* of the lesion which has pro-

[1] Vol. i. p. 440.

uced it. It may be either central or peripheral. If *central,* the lesion is probably situated in the medulla oblongata, or so as to implicate the roots of the pneumogastric and spinal accessory nerves. In that case we should probably have, not only laryngeal, but likewise head symptoms, such as pain, etc., perhaps optic neuritis, and usually other nerves are implicated. Thus in bulbar paralysis not only is there palsy of the vocal cords, but likewise of the palate, lips, and tongue, owing to the 7th and 9th as well as the spinal accessory nerves being involved. In our case, however, there are no head symptoms, nor is there paralysis of any other part than the vocal cords, so that in all probability the lesion is not central; it must therefore be *peripheral,* in which case either the pneumogastric nerves or their recurrent branches must be involved.

[Dr Anderson then referred to a variety of morbid states, such as diseases of the œsophagus and thyroid gland, which have been known to produce paralysis of the vocal cords by pressure upon these nerves, and then proceeded as follows.]

What peripheral lesion, then, has given rise to the paralysis in this case? The history having pointed to symptoms of catarrh of the larynx at the outset, it was hoped at first that this was the cause of the paralysis, but a careful examination of the patient's chest has led me to take a much more gloomy view of his case. You will observe that the apex beat of the heart is displaced very much downwards and to the left, being situated in the 6th space, 3¼ inches below the nipple and 2 inches to the left of the nipple line, and that the cardiac dulness is proportionately displaced downwards. Secondly, the breath sounds are much more feeble over the left than over the right lung, especially at the apex; and perhaps the left side of the chest is rather flatter than the right. There is no other evidence of disease of the lungs, except that slight musical rhonchi are to be heard at times over the greater part of the chest on both sides. Thirdly, you will observe that the veins on the left side of the neck and left infra-clavicular region are a little fuller than those on the right. There must, therefore, be a something within the chest which has pushed the heart downwards and to the left, and which is interfering with the free entrance of air into the left lung, and the free return of venous blood from the veins on the left side of the neck. It is reasonable, therefore, to conclude that we have here to deal with an intrathoracic tumour which is pressing on one or both of the recurrent laryngeal nerves, and thus producing the paralysis of the vocal cords. I say one or both, because it has been shown that bilateral paralysis may result from pressure upon one pneumogastric nerve, and which Dr George Johnson believes to result from reflex paralysis, while Mackenzie thinks it more probable that central disease is set up, the nuclei of the spinal accessory nerves (from which the pneumogastric receives most of its motor fibres) becoming actually diseased.

What, then, is the nature of the tumour? Upon this point desire to speak with more reserve, although the evidence, as far it goes, is rather in favour of aneurism. There is an absence of t cachexia of malignant disease, which is by far the most comm form of solid tumour within the chest, while, on the other har the patient's age (49) is quite in accordance with the aneurisn theory. Pulsation, too, is to be felt in the supra-sternal notc and while the carotids beat with equal vigour, the pulse at the l wrist is much feebler than at the right. This is well shown in t sphygmographic tracings which have been taken by Mr Steven; a

From Right Radial Artery.

From Left Radial Artery.

although this symptom is met with in connexion with solid tumou within the chest, it is much more frequent in cases of aneurism. A all events, we shall not attempt the treatment by faradization of th vocal cords, but shall treat the case on the aneurismal theory, keep ing our patient absolutely at rest in bed, restricting to some exten his food and drink, and administering ʒss. of the iodide of potassiu three times a day.

Sequel of the Case.—On the morning of the 4th April, about A.M., this patient, while sitting up in bed, was seized with violen coughing and breathlessness. The house-surgeon, on his arrival found him sitting up in bed, livid, half conscious, and spittin bright red blood. After about two ounces had been ejected h became too weak to expectorate, and in about half an hour fron the onset of the symptoms death closed the scene.

On post-mortem examination by Dr Coats, an aneurism abou the size of an orange was found springing from the posterior wall of the whole of the transverse part of the arch of the aorta, but particularly from the left side; it projected upwards above the level of the transverse part of the arch, the great vessels springing from the aorta lying quite in front of it. It is doubtful whether the right recurrent nerve can have been pressed on during life, but the left was subjected to very great pressure as it wound round behind the tumour, being, indeed, incorporated with it. The posterior wall of the aneurism was very thin, and adherent to the œsophagus and trachea, which were flattened out and lying almost side by side. On opening the trachea the left bronchus was found to be diminished in calibre, and at the bifurcation of the trachea were two small openings communicating with the aneurism, which accounted for the hæmorrhage at the last.

ARTICLE IV.—*Clinical Remarks on Cases of Hydrocele.*[1] By J. C. OGILVIE WILL, M.D., F.R.S.E., Surgeon to and Lecturer on Clinical Surgery at the Aberdeen Royal Infirmary.

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GENTLEMEN, to-day I desire to direct your attention to a case of hydrocele which presented some peculiarities not often met with, which were not a little misleading, and which led some of you astray when you were attempting to reach a correct diagnosis. I shall at the same time take the opportunity of referring to some cases which have been recently under treatment, for the purposes of comparison and instruction.

When the patient who is now before you was admitted to hospital, he was suffering from a scrotal tumour on the right side, and on examination the following symptoms were elicited, viz., it was the size of a large cocoa-nut, and somewhat pyramidal in shape; on palpation it felt tense, and it was dull on percussion. There was a slight impulse on coughing, and on the application of the light test it was found to be opaque. When the tumour was grasped at its upper part the spermatic cord could not be made out, and the testicle could not be felt. When the fingers of one hand were applied to the lower aspect of the swelling, and when its upper part was lightly tapped with the fingers of the other, a distinct wave of fluid was felt. The position of the patient did not alter the appearances, and those of you who attempted to reduce the swelling by pressure failed to accomplish it; but when pressure was applied to the upper part of the tumour an evident change in the aspect of the swelling ensued, and some of the previously ascertained symptoms disappeared. Its upper limits were now distinctly defined, there was no longer a thickened neck nor a continuation of swelling along the inguinal canal, the cord could be felt without difficulty, and while slight pressure was kept up by the finger-tips at the external abdominal ring, there was no impulse on coughing. The other signs remained unchanged. Diagnosis was now easy, for it was undoubtedly an example of hydrocele of the tunica vaginalis, complicated by reducible inguinal hernia. Let me point out to you what symptoms suggested hernia as the probable affection from which this man was suffering, and what hydrocele. He had a tumour which, according to the patient's statement,—and to this I have not yet alluded,—commenced above, and for the relief of which he had worn a truss. Now, this mode of commencement is a differential sign on which I find that students are wont to place much reliance; and it is undoubtedly correct that a hernia does commence above and a hydrocele below, and it is dwelt upon in all surgical works as both noteworthy and significant, but I have not myself found that patients, as a class, are so observant as to be able to supply trustworthy data on this point. It is, therefore, a symptom concerning which I seldom make inquiry, and when there are so many reliable signs this one can, I think, be safely disregarded. Next, the swelling extended into the inguinal canal, the cord could not be felt, there was an impulse on coughing, and the tumour was opaque. These symptoms all suggested hernia. But the wave of fluid impinged against the finger-tips, the inability to feel the testis, and, in a minor degree, the dulness on percussion, pointed to hydrocele.

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[1] These "Clinical Remarks" were not all delivered continuously, but simply as opportunity offered in the course of the ordinary ward instruction; they, however, retain the form in which they were originally given, with the exception that I have now endeavoured to dovetail them in such a manner as to make them run smoothly without unnecessary iteration.

The reduction of the hernia set all doubts at rest, and I was able to say with certainty that it was a case of hydrocele of the tunica vaginalis. There was, however, one symptom which merits more than a passing notice, viz., the opacity, for hydroceles are, as a rule, translucent, and this is one of the most reliable aids which we possess in making a correct diagnosis, for if it is present the character of the tumour is at once established, but its absence, as this case shows, does not prove the converse. And although I cannot endorse in its entirety the statement of Percival Pott that "the transparency of the tumour is the most fallible and uncertain sign belonging to it, and whoever would be acquainted with this disorder must learn to distinguish it by other, and those more certain marks, or he will be apt to fall into very disgraceful as well as pernicious blunders," still you should weigh well words such as these, falling from the lips of one whose articles on hydrocele bear the impress of the master-mind whence they emanated, and who was, from his vast experience and acute powers of observation, entitled to command for them, if not our complete acceptance, at least our most careful consideration.

The hydrocelic fluid is usually of a light amber or straw colour,

but occasionally, from admixture with blood or from the presence of cholesterine, it is brown or brownish-yellow, and this change in colour would of course account for the non-translucency; and further, if there were any abnormal thickening of the sac, the tumour would be opaque on the application of light.

Notwithstanding our experience in this case and that of Pott, to which I just now referred, the light test is one which you should regard as a most valuable aid to diagnosis, for in the great majority of hydroceles it will furnish you with all the information you require; only bear in mind that it is not absolute, and do not forget that, when it fails, you have other signs which may lead you aright. This may seem an almost unnecessary caution; but experience has taught me that it is not so, for I have seen an opaque hydrocele cut into under the belief that a tumour of the testicle requiring excision was being dealt with; I have seen a patient chloroformed, and all preparations made for the operation of extirpation of that organ, when, at the last moment, the surgeon was prevailed upon to make an exploratory puncture with a trocar, which speedily showed the real character of the affection to be a hydrocele with thickened walls; and I know of a case where a surgeon was lately called on to operate for strangulated hernia when the patient was suffering from colic and hydrocele.

To return to the history of our case. Soon after admission he was tapped, and 45 ounces of dark-coloured fluid, containing an enormous percentage of cholesterine, which formed a thick and glistening layer on the top of the recipient vessel, flowed through the canula. Iodine was injected at a subsequent period when slight re-effusion had taken place; but as this method of treatment failed to effect a radical cure, a catgut drain was inserted under spray, and although putrefaction took place and his progress towards recovery was thus delayed, the patient has now permanently got rid of his malady so far as the hydrocele is concerned.

The case of which I shall now speak is no longer in hospital, but most of you had an opportunity of examining the patient some little time ago. I refer to J. B., æt. 45, who was suffering from an encysted hydrocele of the spermatic cord. In his case there was a scrotal tumour on the right side, extending from the external abdominal ring to the end of the scrotum. In appearance it bore some resemblance to a sausage, but it was irregular in outline when the skin was tightly stretched over it. It was dull on percussion, fluctuation was distinct, and it was translucent. The testicle was distinctly felt attached to its lower extremity. On careful examination its true character was unmistakable, but a careless observer might have regarded it—1*st*, as a hernia; 2*d*, as an encysted hydrocele of the testis; 3*d*, as a diffuse hydrocele of the cord. I have already dwelt upon the difference between a hydrocele and a hernia, and repetition is unnecessary. The symptoms upon which I relied as distinguishing the tumour from an encysted hydrocele of the testis were its shape and the possibility of separating the testicle and epididymis from it. This was only done with difficulty, as the swelling encroached closely on the gland, still it could be made out with sufficient distinctness to prove that it was not a cyst arising from the testicle or epididymis. Before discussing the differential diagnosis of encysted and diffuse hydrocele, I shall first explain shortly the pathological bearings of the two conditions. In the former a thin-walled cyst, possessing the ordinary character of a serous membrane, is developed in the connective tissue of the spermatic cord; it generally arises from an imperfect obliteration of the prolongation of peritoneum formed at the period of transition of the testicle, and in this space effusion of light-coloured fluid takes place. In the latter—*i.e.*, diffuse hydrocele—there is simply an œdema of the cells of the connective tissue of the cord, the cells being converted into large vesicles. The one is therefore an encysted collection of fluid, the other an œdema. Fluctuation is common to both, but the feeling of a continuous wave of fluid which was so characteristic a feature of our patient's case would certainly not have been present had the swelling been simply œdematous. Again, a diffused hydrocele, when of large size, is somewhat pyramidal in shape when the patient is in the erect posture, and becomes elongated when the recumbent position is assumed; but in the case now under notice no such differences were manifested. These points seemed to me to be sufficient to prove that we had an encysted hydrocele of the cord to deal with, and paracentesis showed that I was correct, for 12 ounces of clear, highly albuminous fluid flowed away, and the whole abnormal swelling at once disappeared. The fluid was examined for spermatozoa, but none were found. The means adopted for the man's permanent relief will be noticed subsequently.

There is, however, gentlemen, yet another abnormal condition with which encysted hydrocele of the cord might be confounded, viz., hydrocele of a hernial sac, of which I have recently had an example in private practice, a notice of which may interest you. My advice was sought some time ago concerning a scrotal hernia in the case of a little lad. The rupture was reduced, a truss applied, and strict injunctions were given that truss-pressure should be kept up constantly.

About fourteen months afterwards the boy was brought to me on account of the supposed re-appearance of the hernia, and on examination a small, somewhat elongated scrotal swelling was found in the situation previously occupied by the rupture. It was tense, dull on percussion, irreducible, and translucent, and when the child cried, which he did most lustily, there was no increase in size. The testicle could be felt below and behind, and could be easily isolated. There was, then, no evidence of the previously existing hernia, whose radical cure had been achieved by well-kept-up pressure, and the scrotal tumour derived its origin from

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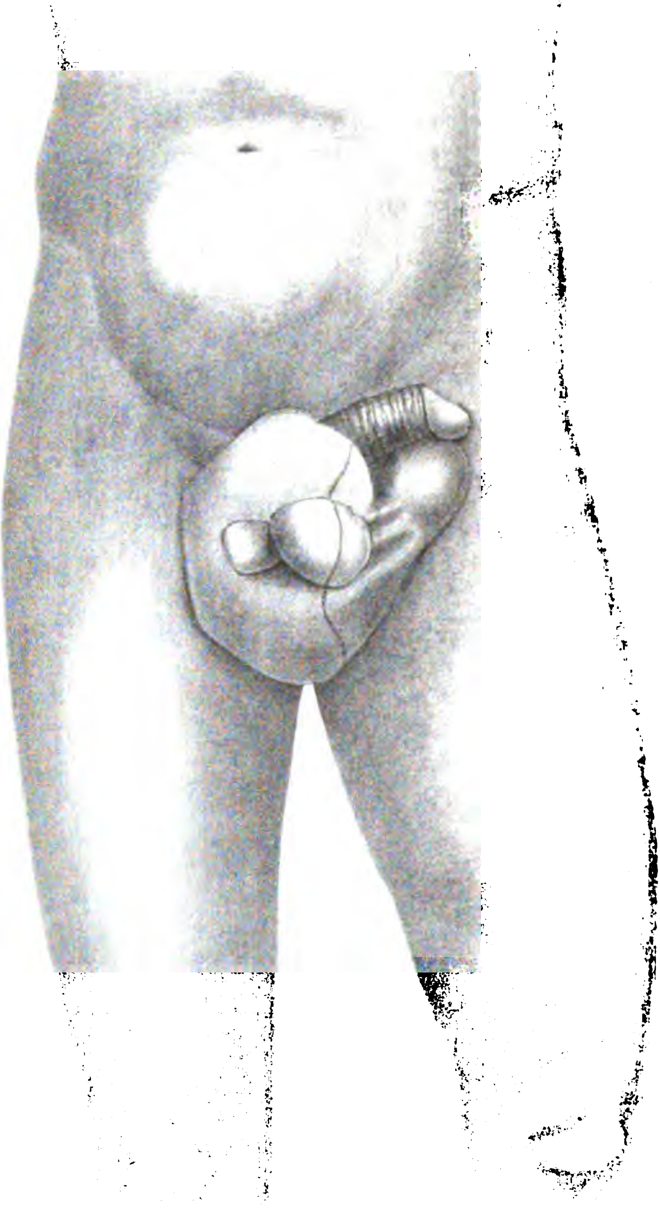

effusion into the hernial sac. I tapped it and gave vent to an ounce of clear albuminous fluid; it speedily refilled, but ultimately disappeared spontaneously. The history furnished the chief means in reaching a diagnosis.

The next case was one of simple vaginal hydrocele, but it was one of considerable interest, as it presented some peculiarities which, so far as I have been able to ascertain, have not yet been observed by those who have written on hydrocele. The patient was an old man sent here from the poorhouse, who was the subject of a hydrocele of large size on the right side. If you look at this drawing, for which I am indebted to Mr Ramage, and which gives a very fair representation of the appearance presented by the patient's scrotum, you will see that there is a large tumour with two elevations on its surface, and that over the larger of the two the raphe passes. On the application of light translucency was evident throughout, but this test showed that the walls of the superficial lobules were much thinner than were those of the tumour upon which they rested. On examining the anterior aspect of the swelling, an opening in the tunica vaginalis, large enough to admit the tip of a forefinger, was found: in feeling it bore much resemblance to that presented by the external abdominal ring when it is felt through the integument. Through this opening there was a direct communication between the cavity of the tunica vaginalis and the cavities of the superficial swellings, for they could be emptied of their contents by making pressure upon them, and they could be made more prominent by squeezing some of the fluid out of the vaginal cavity into them.

Having now explained the clinical features presented by this case, let us next see how we may account for them; and here I can only offer you some hypotheses, for I am unable to speak dogmatically. The opening in the anterior wall of the tunica vaginalis may have been congenital, or it may have resulted from a wound of the tunic which remained patent after a previous tapping.

Regarding the former of the two propositions we are quite entitled to believe that such a congenital deformity may have existed, as such "freaks of nature" are not uncommon in the human body; and although, as I have already stated, such a defect has not yet, so far as I know, been observed in the case of the tunica vaginalis, still, reasoning from analogy, it is not unlikely that this may furnish the correct explanation, and in that case we can readily account for both the opening and the circumscribed swellings which our case presented. It is not, however, impossible that the opening was traumatic in its origin, that it was occasioned by the wound inflicted by the trocar, and that the swellings arose from an escape of the hydrocelic fluid into the connective tissue. If so, it is strange that the fluid should not have forced its way more widely—in short, that a general œdema of the scrotum did not result, instead of the small circumscribed collections. I am, therefore, of opinion that it was congenital, and I am strengthened in this view by the fact that the opening was of much larger size than would have resulted from the wound of a trocar of even the largest dimensions, and there are other problematical indications on which I need not dwell, all of which suggested a congenital and not a traumatic origin.

The following case is brought before you with the intention of showing you that you should make use of the translucency test, not only for the light it throws upon your endeavours to determine the true nature of scrotal swellings, but also for the purpose of enabling you to avoid an error which has frequently occurred during paracentesis of a hydrocele, viz., wound of the testicle. Many of you will recollect a man who was recently in the lock ward suffering from chancroid, and who was the subject of a scrotal tumour which was readily diagnosed as a common hydrocele. Before tapping him we examined him with a view to ascertain the position of the testicle, a fact which can be elicited by making digital pressure on the tumour at different points, and also by the opacity of that part of the hydrocele where the testis lies. You know that in most cases it is to be found about the centre of the scrotum posteriorly, but in the case of which I now speak palpation led us to believe that it was situated, not behind, but in front, and on making the scrotal bag tense and placing a candle behind it, and then looking through the tumour, our previous opinion was verified.

The experience gained through an examination of this case should warn you never to tap a hydrocele without first making sure of the position of the testicle, else you may effect what Dupuytren has told us he saw done on several occasions, viz., penetration of the testicle, a proceeding which might lead to consequences not only discomfiting to yourselves, but disastrous to your patient. The unusual situation of the testicle in our case was due to congenital malposition of that organ, but it sometimes occupies a similar position from the occurrence of previous inflammation in the tunica vaginalis and the contraction of adhesions between the gland and the tunic by which the testicle is drawn forwards.

So far, gentlemen, I have said but little regarding the treatment of hydrocele, and that part of our subject must now engage our attention; but before adducing cases where our attempts to effect a radical cure were successful, let me first bring under your notice a case where we failed to procure that most desirable result, for failures are sometimes as instructive as successes, and the example about to be related presents features of not a little interest. The patient, A. H., æt. 76, with whom many of you are acquainted, was in the accident ward the other day for the purpose of having his hydrocele tapped, and I then took the opportunity of laying before you the following history of his case:—When he first sought my advice he was suffering from a chronic vaginal hydrocele, and as he stated that he had been tapped on five previous occasions, that the intervals between the tappings were becoming shorter and shorter, and as he expressed anxiety to have some radical measures employed, I was desirous to comply with his wishes. On account of his age and infirmity I was unwilling to risk injection of iodine, as in the aged it is apt to be followed by untoward results. I therefore determined to insert a catgut drain, for I felt assured that, if I should succeed in carrying out antiseptic treatment properly, the absence of any undue irritation would be ensured, and that a cure might be safely achieved. The hydrocele was tapped under spray, and a probe armed with nine threads of thick catgut was passed into the cavity of the tunica vaginalis, near the lower part of the scrotum, and brought out close to the external abdominal ring. The projecting ends of the drain were then tied together, the perineum was well stuffed with loose gauze, the external dressing was kept in place by drawing the penis through an opening cut through the centre of the gauze and waterproof, and antiseptic and elastic web bandages were employed to keep all in accurate position. As there was no inflammation, no rise of temperature, and no pain, excepting on one occasion from over-tightness of the bandages, and only some serous discharge from the points of emergence of the drain, the daily progress is unworthy of notice. Ten days after the insertion of the drain its external ends dropped off, and three days later the little granulating points which were left after the separation of the catgut were found to be whole, and the patient was dismissed from hospital. I saw him again in a fortnight, and there was no reaccumulation of fluid; but a month later a certain degree of fulness was perceptible, and when he next came under my observation, four months after the operation, the vaginal sac was even mere distended than it was when he first sought my assistance. Examination showed that the hydrocele was perfectly translucent at *all* points; there was no evidence of the presence of the drain, and when he was tapped a quantity of clear, light amber-coloured fluid was drawn off.

A careful and prolonged examination of the scrotum after tapping failed to elicit any sign of thickening of the scrotal walls, the parts presenting the usual flaccid feeling observed in cases of the kind. The catgut had, then, gentlemen, been completely absorbed,—a fact which we must regard with both interest and wonder,—and I ascribe the failure of the means adopted to the smallness of the openings made, and to the entire absence of the inflammatory process. A like mode of treatment was adopted in the case of hydrocele of the cord, and proved curative. In it we succeeded in keeping the parts aseptic; there was some inflammatory swelling, but the pain was of the most trifling character, and the result was eminently satisfactory.

The use of drainage by catgut (or by indiarubber tubes, as has been recently advocated by Volkmann of Halle and Trendelenburg of Rostock), in the treatment of hydrocele, although occasionally useful, is not a method which I would advise you to adopt, fo less troublesome, and, to say the least, equally efficacious measures are at your command. Very many different modes of obtaining a radical cure have been proposed, such as injections of iodine spirit of wine, port wine, solutions of alum, sulphate of zinc, or corrosive sublimate, chlorine gas, and lime-water, etc.; incision o the sac, or excision of a part of it; silk and metallic setons; tapping and applying pressure by strips of adhesive plaster; scratching the interior of the sac with a sharp needle, or passing a probe coated with nitrate of silver into the cavity after paracentesis, and other plans which do not require notice.

Of all the procedures yet proposed, the injection of iodine holds the first place in the estimation of the profession, and deservedly so, for it is only in exceptional cases that it fails.

In proof of its almost universal acceptance, I may tell you that Mr Syme related, in one of his inestimable essays, that the treatment of hydrocele was wont to be a favourite subject with students for their graduation theses, but that "since the use of iodine has been introduced the theses on hydrocele have gradually become fewer, until they entirely disappeared; whence I concluded that the advantages of this means were so manifest that they had led to the abandonment of all the others, and left no room for discussion," and although many attempts have been made to supplant injection by other modes, they have been but ephemeral.

An opportunity was recently afforded you of seeing how this little operation should be performed; and although many different plans are in use, such as those of Sir Ranald Martin, Curling, and Van Buren, the mode proposed by Mr Syme, which I invariably employ, is the simplest and surest one. His directions were as follows:—"In the first place, the patient should stand while the sac is tapped, in order to let the water be drained off completely. Then two drachms of the Edinburgh tincture of iodine, which is much stronger than that of the Pharmacopœia, should be injected, unless the tumour is either very large or very small, when there may be a corresponding increase or diminution of the quantity employed; and, lastly, a rough shake of the scrotum should diffuse the injected fluid over the whole surface of the cavity." To these instructions I would add a single suggestion for your guidance, viz., that after the trocar is withdrawn the canula should be well pushed home, so that there may be no risk of its falling out or receding so far from the vaginal cavity as to permit of the entrance of iodine into the surrounding cellular tissue.

Injection of iodine occasions considerable pain at the time,—indeed, so acute was it in one of my cases that the patient fainted,—but it speedily disappears. About twenty-four hours afterwards you may look for the recurrence of pain, and you will find some effusion and swelling of the testicle, which generally subside in the course of a few days. The orchitis does, however, vary greatly in degree in ferent cases; for I have myself seen one where it was scarce perceptible, yet in it the cure was perfect, but I have also had patients under my care where there was great orchitis and extreme pain. In the case of the man with hernia and opaque hydrocele there was positively no tenderness nor enlargement of the testicle or its appendages after injection; in short, the case simply pursued such a course as follows simple paracentesis, viz., slow re-effusion of fluid.

When considerable inflammatory reaction ensues I have found much relief to accrue from the application of a tobacco poultice made by boiling an ounce of cut tobacco with a sufficiency of water to make a cataplasm, and then adding linseed until a proper consistency is reached. No other treatment is required, but before the patient resumes his ordinary avocations he should provide himself with a suspensory bandage, which he should continue to wear for some weeks.

The pathological changes produced by the injection of iodine, by which the upset balance between secretion and absorption is restored, are not always alike, for post-mortem examination has shown that in some there was complete obliteration of the vaginal cavity, in others partial adhesions, and in a third class no adhesions were discoverable. Billroth has suggested that the arrest of the hypersecretion is due to shrinkage of the serous membrane with new formation of endothelium, that there is condensation and probably increased formation of the connective tissue, which, contracting on the serous membrane, causes it to shrink to its normal size, and in this wise we are enabled to account for a radical cure without the presence of that condition of parts which was for long deemed essential, viz., complete agglutination of the two surfaces of the tunica vaginalis.

In a recent case you saw me apply iodine to the interior of the hydrocelic sac in another way. Instead of drawing off the fluid by a trocar, I passed a sharp-pointed probe threaded with silk through the lower part of the swelling, and brought it out above, and allowed the serous fluid to drain away by the side of the ligature. After all the water had escaped, I moistened about an inch of the thread with iodine liniment, and by making traction on its other end the iodized portion was brought within the cavity of the sac. A little gentle friction was next used for the purpose of spreading the iodine over the secreting surfaces of the hydrocele, which, by the way, was a small one. The same process was repeated by the patient at intervals of an hour, and when, after the eighth application of iodine, sharp pain was felt, the thread was altogether withdrawn. Slight swelling and effusion followed, but a radical cure resulted. Mr Furneaux Jordan, when submitting this mode to the profession, wrote strongly in its favour, and he considered it specially applicable to encysted hydroceles of the cord and testis, as "the walls of the cysts are usually thin, and collapse so much when their contents are withdrawn that the injection of iodine is uncertain. The end of the canula may be outside the cyst, and the iodine solution be consequently injected into the connective tissue at its exterior." With the seton this cannot happen, and in such cases as those you will find it a reliable and efficient measure.

With the exception of tapping and strapping, which has recently been revived, but which seems to me to have little to recommend it, all the other methods of curing hydrocele have fallen into deserved disuse; and as I am unable to offer you any clinical examples of their effects, I need not detain you with any notice of how they may be carried out. In addition to the cases now reviewed at length, examples of other forms of hydrocele have been recently under treatment in my wards, such as double vaginal hydrocele; acute vaginal hydrocele accompanying epididymitis; chronic effusion into the cavity of the tunica vaginalis in a case of gummatous deposition in the testicle; encysted hydrocele springing from the epididymis; congenital hydrocele; and an example of a very rare form, where there was effusion between the tunica vaginalis and tunica albuginea. Opportunities have thus been afforded of examining most of the known varieties of hydrocele, a circumstance which proves that within a limited area this disease may be encountered in varying and many-sided forms, and that a correct knowledge of this subject is therefore indispensable to all who propose entering on surgical practice, and who desire to conduct it successfully.

ARTICLE V.—*Retro-Pharyngeal Abscess in an Infant; Sudden Death by Hæmorrhage.* By JAMES CARMICHAEL, M.D., F.R.C.P.E., Extra Physician, Royal Hospital for Sick Children.

(*Read before the Edinburgh Obstetrical Society, 25th May* 1881.)

THIS disease is one peculiarly liable to occur in the period of infancy and childhood, inasmuch as by far the larger proportion of recorded cases have been observed at an early period of life. Of a number of cases recorded by Dr Allin, fully one-half were under ten years.[1]

The symptoms and general course of the disease, as well as its etiology, have been fully described, and are familiar to all practitioners.

The object of the present communication is to relate a case, that of an infant five weeks old, the subject of this disease, and whose death was caused in a sudden and unexpected manner from a cause rarely if ever met with in such cases. In looking over the literature of the subject I have been unable to find any record of death occurring in the manner to be described, excepting in one case referred to by Erichsen.

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[1] *New York Medical Journal*, Nov. 1851.

For an account of the previous history of the case, and for permission to record it, I am indebted to my friend Dr James Sidey, under whose care it was. The circumstances are these:—On the afternoon of Wednesday, the 20th inst., I was asked to visit the child, the father bearing a note which Dr Sidey, who had seen it some hours before, had written to a well-known surgeon in this city, asking him to see the infant, with a view to possible surgical interference in the way of opening an abscess which Dr Sidey believed was situated on the left pharyngeal wall. This gentleman being from home, I agreed to visit the little patient. On entering the room the infant was in its mother's arms. Before I had time to ask any questions or examine the child, blood gushed forth from its nostrils and mouth, and in the course of two or three minutes the infant died. The amount of blood lost might be guessed at from 5 to 6 ounces. Dr Sidey gives the following history up to the period of his last visit:—" Mrs M.'s child, a healthy, well-nourished male, five weeks old, was out on Friday last, the 15th inst., for about half an hour for the first time. On the following Sunday, two days after, the first signs of illness showed themselves; the child was restless, and exhibited symptoms as if suffering from cold in the head. Two days thereafter, on the Tuesday, I saw him, and found the glands on the left side of the neck enlarged, and showing a tendency to impede respiration. On examination of the throat for diphtheria or scarlatina, I did not find anything to make me suspect their existence. There was no great amount of heat or signs of fever. The following day the glandular swelling was increased, and symptoms of impeded respiration more marked; the throat on the left side, in the region of the tonsil, was much swollen, and appeared as if an abscess was forming; respiration much impeded; the left half of the tongue was greatly swollen, and had a sausage-like appearance; the right half was thin and natural. I diagnosed pharyngeal abscess, and proposed to open it, and, as good luck would have it, did not." A post-mortem examination was made about twenty-four hours after death. The body was that of a well-nourished male child, and was extremely pallid. The neck and thorax were alone examined. Both lungs were voluminous, dark frothy fluid exuding on section. The trachea was partially filled with a similar fluid. The larynx contained several dark clots of blood. On examining the neck and pharyngeal region, the glands on the left side were generally enlarged. The tongue and all the pharyngeal structures were removed close to the spine. On examination a sloughy-looking abscess cavity, containing dark, unhealthy pus, was found external to and behind the left tonsil, communicating with the pharynx. The spinal cervical region showed no signs of caries or any other disease. A probe passed into the distal cut end of the external carotid artery entered the abscess cavity through a ragged opening in the arterial wall. The coats of the artery in the neighbourhood of the abscess were thinned and softened, and in a commencing sloughing condition.

Death from hæmorrhage in this manner is very uncommon, although, from the close proximity of large vessels in the neck, we might well expect it to happen more frequently. The present case is therefore one well deserving of record on account of the rarity of its termination, the age of the child, and the important surgical lesson which it teaches of the necessity of extreme caution in opening by the knife an abscess in this situation. We might readily picture the astonishment and dismay of the surgeon who plunged his bistoury into the pharyngeal wall in such circumstances. Death, as nature showed us when she performed the operation in this case, was almost instantaneous. Had the opening been made by art, the luckless operator would have got the credit of killing his little patient.

As a contrast, it may not be unprofitable to refer briefly to the more ordinary course of such cases, and also to allude to the possible cause of the disease in the one at present under consideration. Dr Fleming of Dublin and Dr Allin of New York have both written interesting monographs on this subject. The disease, as we have already stated, is one specially liable to occur in early life, the largest number of recorded cases being under the age of two years. The earliest age of any hitherto recorded case which I can find is one related by Dr Hocken of an infant aged nine weeks.[1] The *causes* of the disease are various. Some observers consider that the causes leading to abscess may exist at birth. The abscess is perhaps most frequently the secondary result of previously existing disease, such as measles or scarlatina, erysipelas or syphilis, or locally of caries or other disease of the cervical spine, or of ulcerative or catarrhal pharyngitis, causing lymphatic glandular hyperplasia and subsequent inflammation. In several recorded cases the causation would appear to be primarily the result of cold, or the swallowing of irritating substances. The size and extent of these abscesses varies very much; in some cases the pus burrows down among the muscles, and even finds its way into the pleural cavity, causing death by pleurisy or empyema. The symptoms generally found vary somewhat according to the extent of the abscess. There is always more or less constitutional disturbance, often amounting to high fever, and invariably more or less dysphagia and dyspnœa. Can we assign any cause for the disease in the present case? The child, to all appearance, was perfectly healthy until five days before death. It had been out shortly before for the first time, and to all appearance had got cold, having exhibited symptoms of coryza. Dr Worthington[2] relates the case of a child nine months old, and previously healthy, in whom the abscess resulted from cold. It suffered greatly from dyspnœa and had many of the signs of croup during life. Another possible cause suggests itself in this case. Curiously enough, the day after this infant died one of the elder children in the family displayed a well-marked scarlatinal rash, with complete absence, however, of fever, sore throat, or any other of the usual accompaniments of this disease. The infant had not been affected with any rash or other symptoms of scarlatina, so that the existence of any fever poison as a predisposing cause is doubtful: still this fact, whether it be a mere coincidence or not, is deserving of note.

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[1] *Provincial Medical and Surgical Journal*, 1842. [2] *Ibid.*

The *treatment* of this disease has been very generally conducted on the same principles in all recorded cases—the puncturing of the abscess on the earliest possible occasion on which its existence was assured, and the symptoms to which it gave rise were urgent, being recognised as the orthodox method of procedure. In no recorded case to which I have had access has the probability of the occurrence of any communication between the abscess cavity and the great vessels of the neck been entertained.

The main interest of this case, in addition to the early age of the child, centres in this rare complication; and the question which suggests itself to every surgeon will naturally turn upon the possibility of distinguishing between a simple abscess and one that may be said to have been converted into a false aneurism by a large vessel having opened into its cavity. Whether there was any pulsation in the tumour during life had not been ascertained by tactile examination. Undoubtedly, in all cases, before proceeding to make an incision, this should be done with scrupulous care, and the precaution taken of compression of the carotid had recourse to, in order to discover if any change in the tumour could be thereby produced.

The question of an abscess in the neighbourhood of an artery producing ulceration of its walls and hæmorrhage is important. Abscesses in which the inflammation is of a healthy character are not so prone to destruction of surrounding tissue. Healthy pus is formed, which naturally points in the direction of least resistance, and is soon evacuated. On the other hand, when you have a low form of inflammation with sloughing, as occurs after scarlatina or similar debilitating disease, the risk of ulceration of an arterial wall, if near at hand, is very great. Here you had no formation of healthy pus, but a gradual and progressive death of all the tissues in the neighbourhood. Erichsen[1] says on this point, "I have known this condition occur in the neck and in the thigh—in the neck from sloughing scarlatinal abscess implicating the carotid. When this untoward complication of abscess occurs in the neck, the hæmorrhage is usually so sudden and so profuse that the surgeon has not time to tie the carotid before life is extinct." Gangrenous abscess is sometimes found to occur apparently as a primary disease. A case of this kind, in which, however, no hæmorrhage took place, is related by Korman.[1] The child when first seen had been suffering from sore throat for several days. The soft palate and right tonsil were red, but no diphtheritic deposit observable. Cervical and submaxillary glands were enlarged and tender. Within a short time part of the soft palate, tonsil, and pharyngeal wall sloughed, causing a horrible stench. The patient got into a very collapsed state, but ultimately recovered under the use of ether injections and musk and sherry wine. On the fifteenth day of the disease, the wounds left after the separation of the sloughs had cicatrized. Dr Korman enters into a discussion of the diagnosis of the case as between diphtheritic gangrene and gangrenous pharyngitis, and concludes with the opinion that it was probably primary circumscribed gangrene of the pharynx.

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[1] *Science and Art of Surgery*, vol. i. p. 117.

ARTICLE VI.—*An Improved Method of Treating Uterine Displacements.* By ROBERT BELL, M.D., Physician to the Glasgow Institution for Diseases of Women and Children.

(*Read before the Edinburgh Obstetrical Society, 23d February* 1881.)

I TRUST the members of this Society will not deem it presumption on my part in having designated my plan of treating uterine displacements as an *improved* method. Perhaps it would have been more modest if I had called it a *new* method of treating such malpositions. I, of course, was viewing the subject from my own standpoint; and as experience has taught me that patients do better with *me* under this than under the *old* mode of treatment by pessaries, perhaps you, gentlemen, will excuse me if I have prematurely used the adjective which is at the heading of this paper. I feel assured that if you obtain the same good results that I have done, you will in future adopt it, and by so doing will tacitly acknowledge it to be an improvement. It may be, I admit, that I have not employed the ordinary treatment by pessaries correctly, and thus my want of success. But if this has occurred in my practice, I have the consolation of knowing that it has occurred in the practice of others also; moreover, that after failure in giving relief has happened in the hands of my friends, where pessaries have been employed, my plan has eventually succeeded.

It will be my aim, in this communication, to limit my observations as strictly as possible to practical details anent this method of treating displacements of the womb. It will therefore be quite unnecessary for me to occupy your time by any prefatory remarks regarding the anatomy of the organ itself and its relations to the surrounding viscera. Suffice it to say that the normal relations of the uterus to the neighbouring parts is often departed from, and it is rarely that this departure can occur without entailing not only local pain and intense discomfort, but also, through the nervous apparatus, serious physical and mental suffering. Any plan which experience can demonstrate to be of service in such straits is therefore not only worthy of serious consideration, but it is also our duty to test it and ascertain whether it really, in other hands, will give the same good results as its exponent claims for it. The peculiar posing of the uterus in the body, the elasticity, or rather yielding nature of its supports, and its dependence upon the health of the neighbouring viscera for this support being uniformly maintained, renders it peculiarly liable to displacement. Anything which interferes with the circulation in the pelvis will naturally interfere with the health of the womb, and will thus render it more susceptible of disease, and in this way will predispose to malposition. If constipation exists, then the weight of the fæces in the sigmoid flexure and the higher reaches of the colon will not only interfere with the free circulation in the pelvis, but will also, by mechanical pressure on the organ, crowd it out of position. Then, again, if we have an irritable bladder, and in consequence of this the viscus being unable to retain more than a few drams of urine at a time, the constant desire to make water, and the straining which frequently accompanies each act of micturition, will, as a result, force the uterus forwards. Another pregnant cause of displacement, acting this time from above, is dyspepsia, which, causing distention of the intestinal canal, brings undue pressure to bear from above upon the fundus. One more powerful factor in inducing these dislocations has recently been pointed out, viz., the endeavour to obtain greater compass and volume in singing by powerful action of the abdominal muscles, and so forcing downwards all the viscera. It is therefore obvious that any causes such as those enumerated must of necessity be removed before local remedies can have the desired effect. It will also be necessary to attend to the health of the canal of the neck and body of the organ at the same time that the displacement is being tackled, or we will be most certainly disappointed in our ultimate results.

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[1] *Jahrbuch f. Kinderheilkunde*, xvi. B., 2 H.

It would be quite foreign to the object of this paper were I to enter upon the symptomatology of uterine displacements. These are so well known to every member of this Society, that I will now only speak of a remedy which, while it acts as a support to the organ, also does duty as a medicinal agent, and stimulates to a more healthy action the surrounding parts. I may be permitted to remark that I have had this remedy as it now stands in use for about two years, and during this period have treated over 200 cases by means of it alone. In fact, I have not used a pessary during the past eighteen months. Amongst the cases so treated every form, and I think I may add every gradation, of displacement has come under my observation, and I can confidently assert that in every case great relief was obtained, and in the majority of cases a complete cure was and is the result. There is certainly this disadvantage in it—the patient requires to be under careful and patient observation for weeks in every case, and in many instances for months at a time; but surely these are trifling objections when we know a woman's health and her husband's and family's happiness are in the balance. Before being led to employ the present application I had used more or less, for years previously, the ordinary glycerine of tannin of the pharmacopœia; but though I found it a most efficacious astringent, and that it answered the purpose I had in view most admirably, yet its expense was a decided barrier to its universal employment, and, moreover, it had the disadvantage of staining the underclothing so much that this of itself told very much against it ever being adopted as a popular remedy. I therefore had recourse to the following solution:—Glycerine, 80 oz.; alum, 10 oz.; carbolic acid, 1¼ oz. It is well known to gynæcologists that glycerine applied on cotton tampons has a most beneficial effect in stimulating the capillary circulation of the uterus and pelvis; moreover, that it acts as a depleting agent, insomuch that it drains the blood of a certain portion of its watery constituents by virtue of its great affinity for water. In short, if there is hypertrophy of the organ or of the cervix alone, we have in glycerine tampons a great aid to the treatment of such cases. It is a matter of observation that if a displacement continues for any length of time, hypertrophy of some portion or of the whole organ is the result. We have thus a greater strain thrown upon the uterine supports, so that what at one time was a result becomes a factor in aggravating the disease. Our first duty, then, is to endeavour to reduce the overgrowth, and at the same time prevent its recurrence by rectifying the position of the organ and retaining it *in situ*. It must also be observed that when we have a hypertrophied condition of the walls of the uterus, in the majority of instances there is softening of the texture, so that a flabby condition results. In these cases it is a matter of little difficulty to restore the position of the organ, but as soon as the support is removed it falls back into its abnormal position. Moreover, if there exists (which frequently does) any amount of inflammatory action, the presence of a pessary is a most serious source [illegible] danger; and besides, supposing there is no danger of an attack [illegible] acute metritis, there yet remains the disadvantage that the relief [illegible] entirely due to the fact of a mechanical support being retained in the vagina, and which every little while requires to be removed to make way for one of larger size, till in the course of a short time the walls of the vagina become as capacious as the pelvis will admit of; moreover, the woman always retains the disagreeable consciousness that she is wearing an instrument, and, let me add, there is ever present the danger of the hard pessary injuring the soft parts upon which it is constantly resting. It is well known that for a pessary to be of service, and to be clad with the minimum risk of danger, it must fit accurately, and it is only long experience and patient care that will ensure this result. If it does not apply itself with precision to the parts it is worse than useless, and may—nay, certainly will—result in serious mischief. One advantage of my treatment, and no mean one, is, that it is rarely necessary to employ either the probe or elevator when there is a flexion. This is another prolific source of danger removed.

Let us first consider *prolapse* of the uterus. This, as we all know, may vary from a slight lowering of the position of the womb to complete procidentia. It is due either to (1) an increase in weight of the organ; (2) to faulty action of the supports; (3) it may arise from pressure from above, as has been before pointed out, or from all these factors combined.

If there is a lacerated perinæum, this must of course be rectified before any treatment can be followed by beneficial results. From whatever cause prolapse occurs, there is always, as a result, hypertrophy of the organ and relaxation of the vaginal walls and uterine ligaments. If the uterus, then, is elevated to its normal position, and retained there by a suitable appliance, the hypertrophy will disappear; and if at the same time we can stimulate the capillary circulation of the parts, and also cause a steady drain to take place of the watery constituents of the blood in the uterus and its neighbourhood, we will do much to remove the tendency to the displacement by reducing the size of the organ and simultaneously strengthening its supports. This end is attained most satisfactorily by replacing the prolapsed uterus in its normal position, and retaining it there by a tampon of cotton saturated with the glycerine of alum and carbolic acid, and allowing this to remain in the vagina for from three to four days. The presence of this tampon excites an abundant water discharge from the vagina, necessitating the patient constantly to wear a napkin. Glycerine, as has just been observed, excites this discharge, but when combined with an astringent, the effect is an even more profuse drainage of the watery components of the blood; moreover, the effect on the capillary circulation is also intensified, and the astringent effect on the vaginal walls is most beneficial. By this means alone I have had the satisfaction of seeing patients completely cured of procidentia which has existed from three to eight years, after the above treatment has been persevered in for a period varying from two to seven months, and in a few cases where the disease has existed for a much greater length of time very great relief has been experienced after a more protracted course of treatment. If the tampon is merely saturated with glycerine it becomes very offensive after a few hours, and if with glycerine and alum alone, although it does not become fœtid so soon, yet it will do so much too rapidly to enable us to get the full beneficial effect. When, however, the carbolic acid is added, it will be found that there is no fœtor at the end of four days, when the tampon may be removed, to be replaced by another. By this means we can keep the organ *in situ* for weeks and months together, and likewise act on it and the neighbouring tissues with such an advantageous result as to restore them to a healthy condition, while we also have the satisfaction of seeing the woman's general condition indicating a marked improvement, which certainly very much increases the probability of the benefit derived from the local treatment being permanent. I claim for this method of treatment equal advantages with any plastic operation that may be performed upon the vaginal walls; and there is this to boot, that the uterus itself also probably partakes of benefits which an operation on the vaginal walls cannot confer.

Let me now turn to the treatment of versions and flexions of the uterus; and perhaps I may be permitted to remark, without the slightest wish on my part to exhibit a spirit of boasting, that I have treated quite a number of cases which before coming to me had been subjected to the general routine of pessaries and stems without deriving any benefit whatever, and which have, after a few applications of the tampon, expressed themselves as feeling great relief. It may perhaps be interesting to give details of one case. This lady had been suffering from retroflexion of the uterus for six years, which certainly was aggravated very much by obstinate constipation, but this symptom had been quite overlooked. When I saw her first she was a most miserable-looking object, with an ashy complexion, which, however, was partly attributable to the absorption of fœtid matter from fæcal accumulations in the rectum and colon, as when these masses were removed and kept from accumulating, her complexion improved, and she felt somewhat relieved in every way. Yet the least exertion completely prostrated her, and the dysmenorrhœa was most intense. For six years she had been under treatment by means of pessaries and stems of all descriptions, from solid silver stems down to pessaries made of gutta-percha covering copper wire, and with no benefit; in fact, she was daily getting worse, and had lost all heart. In this case I used *two* tampons saturated with the solution, one much smaller than the other, so that it would occupy a position supporting the fundus, well up in Douglas's pouch, while the other and larger tampon was placed behind the cervix, and acted as a support to the smaller of the two. After three months of this treatment she was so far restored to health as to be able to endure a considerable amount of fatigue, and eat and digest satisfactorily, and sleep well, feats she could not perform before; and at this moment I know she enjoys life thoroughly.

I think it often a good plan to employ two tampons in retroflexion and also in anteflexion, but, as a rule, one answers all the purpose.

It is gratifying to observe the speedy effect of this treatment on the bladder symptoms in anteversion and anteflexion. I think I need hardly enter into any further details as to the method of treat-

ing the other varieties of displacements, as it will be obvious to all how each variety may be individually relieved. It may be urged against this method that it is necessarily very tedious in the carrying of it out. Certainly it is; but then any medical man with an average amount of intelligence can, under proper directions, manage an ordinary case of displacement requiring treatment. There is no danger to apprehend from a badly-fitting pessary with its horrible train of symptoms, and there will be more complete relief speedily attained than any pessary can give.

ARTICLE VII.—*Two Cases of Puerperal Hæmatocele.* By R. SOMERVILLE, M.D., etc., Galashiels.

(Read before the Obstetrical Society of Edinburgh, 23d February 1881.)

I MUST apologise to the Society for the reading of two such simple cases as I propose giving this evening, the nature of them being so easily understood and the treatment so obvious; but I have not observed that the subject of puerperal hæmatocele or thrombus has of late been before the Society, and as the affection is one that is not very common, it may be appropriate enough that it should for a short while occupy our attention.

CASE I.—Mrs M., a healthy young woman, was attended in her first confinement by Mr Woollerton, who was at that time assisting me. He saw her for the first time about midday on 31st October 1877, and found her labour progressing favourably. The labour continued natural in all respects, and about five o'clock in the afternoon she was delivered of a female child of average size. There was no instrumental interference, nor was any ergot administered. Half an hour after the birth of the child the mother complained of faintness, also of uneasiness about the rectum. The pulse was somewhat feeble, and the feet were cold; but there was no hæmorrhage issuing externally, and the uterus, felt through the abdominal wall, was properly contracted. So, after giving the necessary instructions, Mr Woollerton left the patient.

About an hour afterwards, in answer to an urgent message, I saw the woman. She was straining as if with labour pains in the second stage, and complaining of great suffering in the perinæum. Her pulse was good, the surface warm, and the uterus contracted. On examination I found the perinæum distended, and the anus also, just as if the fœtal head were about to be expelled from the maternal passage. The vagina was almost occluded; but when the finger was with difficulty introduced, the cause of all the symptoms was recognised to be a soft tumour located in the septum between the rectum and vagina, and decidedly to the left side. The discharge from the vagina was nothing more than normal. The patient was urged to desist from straining, and a morphia suppository was introduced into the rectum.

Late in the evening the patient was again seen. The pain had almost entirely subsided, yet the tumour was rather more tense. Pulse was good. Another morphia suppository was administered, and a pad of tow was applied to the perinæum.

Next day, 1st November, we found that the patient had passed a good night. There had been very little pain and no straining. The tumour was certainly not increased in size.

On 2d November the tumour was felt to be rather softer than before. The anal aperture was closed. Meanwhile the vaginal discharge continued natural; the general health kept quite satisfactory; the pulse was normal. The only thing complained of was discomfort in the perinæum.

From this time the patient continued well in all respects except that of the tumour. She suckled her child, and took her food well. The bowels were moved occasionally by castor oil. Now and then, when the uneasiness was great, a morphia suppository was administered. She was, of course, strictly confined to bed and to the horizontal posture.

On the 16th of November, that is, on the seventeenth day of the lying in, the tumour was carefully examined. It seemed to have diminished nothing whatever in size, being about the bulk of a man's fist; but the contents seemed to have gradually become more fluid. It was accordingly resolved to attempt its reduction with the aspirator, and the largest canula of Matthieu's instrument was dipped in carbolic oil and inserted into the swelling at its vaginal surface. It was not possible, however, to draw off more than two ounces of fluid, owing to the tube of the aspirator becoming constantly blocked up. What was drawn off was dark fluid blood. Though the quantity abstracted made no appreciable difference in the size of the tumour, it was thought advisable to desist from further interference, and to see whether spontaneous absorption might not now take place.

On the day after the use of the aspirator the pulse was quickened, and the temperature raised to 101°. Five grains of quinine were ordered every four hours.

Next day, 18th November, things were much worse; the temperature had increased to 104°, and the pulse was very rapid; the expression of the countenance rather anxious. There was however, no abdominal tenderness or swelling. The tumour was incised by a bistoury introduced into the vagina, and an opening made sufficient to admit two fingers. This gave exit to a quantity of fluid blood, after which a large amount of soft clots was swept out by the fingers. The cavity was then washed out with a dilute solution of carbolic acid. On exploring the cavity it was found to be bounded on every side by a distinct wall; but high up, and rather to the left side, there was not much resistance to the examining finger, the feeling being as if the point of the finger came upon a button-hole. Some oiled lint was now stuffed into the incision. The internal administration of the quinine was ordered to be continued.

On 19th November there was great improvement. The pulse was quiet and the temperature greatly lowered. The cavity was again syringed with the carbolic lotion, which brought away a little dark bloody discharge. A drainage-tube of large diameter was introduced through the incision, and was retained.

For about a week from this time the cavity was syringed out twice daily, and the tube kept in the opening. The blood brought away by the syringing was never much, and in a few days it ceased to come. There was no perceptible suppuration. The contraction of the cavity proceeded rapidly, and it was nearly obliterated at the end of the week. The patient made an uninterrupted recovery as far as the thrombus was concerned, though she suffered much from suppurating breasts. I may add that the patient has had two subsequent labours, both of which were easy and attended with no complications.

CASE II.—Mrs J., aged 23, had always enjoyed good health. She had, however, been subject all her life to occasional hæmorrhages from the nose, for which no cause could be assigned. On the 18th December 1878 she was confined, at the full period, of her first-born child, a boy. For about a month during the latter part of her pregnancy she had suffered from pain in the left gluteal region, but this had disappeared a fortnight before her labour. The labour appeared normal in all respects, and lasted about seven hours. Though she did not complain of it at the time, she subsequently stated that for some time, about half an hour, before the child was born she had pain in the right labium. After her delivery she seemed well, and Mr Hendry, who attended her, left her as such. But almost immediately the pain in the labium began to increase, and in a short while a swelling could be felt in the painful part.

At 5 P.M., two hours after the termination of the labour, I saw the patient. She was extremely restless, and was evidently suffering most severely. The right labium was greatly swollen; it was nearly the size of the child's head, and it was very tense. The swelling extended up the vagina as far as the examining finger could reach, and it extended back to the anus. The woman was otherwise well, and her pulse was normal. A full dose of morphia was injected hypodermically over the gluteus maximus of the affected side. At 9 P.M. the patient was again seen. She had been quiet and comparatively comfortable ever since the injection of the morphia, but the swelling had rather increased, having extended backwards beyond the anus. There was a desire to pass water, but the pressure of the tumour on the urethra prevented this; so the catheter was used, and a large quantity of urine drawn off. A morphia suppository was introduced into the rectum, but was immediately extruded by the elasticity of the swelling.

On the 19th the patient was reported to have passed a quiet night. Though complaining of discomfort, she had no severe pain. The swelling was rather less tense than on the previous evening, but it seemed more diffuse. There was no fever. The catheter had to be passed both morning and evening. The lochial discharge was rather scanty.

On the 20th the general condition continued satisfactory, and the swelling was if anything less tense. The catheter, however, was still required. Lochia natural, but rather less than usual.

Next day, the 21st, the breasts gave evidence of a satisfactory secretion of milk. A dose of castor oil was given, and the bowels freely opened. The urine was now passed without the help of the catheter.

On the 23d the patient was making favourable progress. All uneasiness had disappeared. It was reported by the nurse that on the previous day—that is, on the fourth day of the confinement—the vaginal discharge had become very profuse. On examination it was found that the tumour had much lessened in size, and the finger introduced into the vagina discovered, about midway between the vulva and the upper end of the canal, a rent in its wall of about an inch and a half in extent, the cavity of the thrombus thereby communicating with the vaginal canal.

On the 24th and 25th favourable progress continued to be made, the swelling rapidly diminishing in size.

On the 26th there was slight feverishness, and the vaginal discharge was somewhat fœtid. The pulse was, however, only 84, and of good character; the temperature rather above 100°. Injections of tepid water with Condy's fluid were administered, and some small decomposing blood-clots were brought away. On the three subsequent days the notes made were as follows:—

Nov. 27th.—Discharge less profuse and less offensive. Pulse 96; temperature 101°.

Nov. 28th.—Discharge improving. Temperature 100°·1.

Nov. 29th.—Temperature 99°·9; pulse 84.

On the 30th of November—that is, on the twelfth day of the lying-in—the temperature was scarcely above 99°, and the pulse was 72; the lochial discharge being normal in all respects, the vaginal injections were discontinued.

From this time recovery was uninterrupted. An examination made soon after ascertained that the laceration in the vaginal wall was completely healed. This patient also passed through a subsequent labour without any untoward accident.

The two cases differ materially as to the situation of the hæmorrhagic effusion. In the second case it was situated in one of the labia, the most frequent position of the thrombus. In the first it was not in the labium, but it was in the septum between the vagina and rectum, and no doubt it was owing to its occupation of this site, and to its causing the very same pressure on the perinæum that the fœtal head had done a couple of hours before, that the great straining of the patient was due. I do not find this symptom of violent straining alluded to in the text-books; but in this case it was so severe that, had it not been checked, in all probability the hæmorrhage would have gone on till the integument gave way. But it is likely that the source of the bleeding was similar in the two cases. In the first case I had proof, in the exploration of the cavity, that the blood came from above, but this proof was wanting in the second, because, owing to the early period at which rupture took place, I feared to disturb the clots lest fresh bleeding should be induced. From the character of the hæmorrhage in such cases the blood evidently comes from a ruptured vein or veins, and it would seem most likely that the place of rupture is in the pampiniform plexus of one side or other, this venous plexus being situated in the broad ligament, and formed by a junction of the ovarian and uterine veins. The veins in this situation are normally without valves, and so, even when quite healthy, must be more liable than veins elsewhere to overdistention. In my cases there was certainly no chronic disease of the veins; there was no appearance whatever of a varicose condition, and though one of the women had been liable to epistaxis, it had never been serious, and it is very doubtful whether there was any connexion between it and the hæmatocele. The mechanism of the production of the hæmorrhage would seem to be—*first*, that the pressure of the child exerted on the upper part of the vessels prevents the free return of the blood, and so causes them to become turgid; *secondly*, that, owing to the descent of the fœtus, pressure of a severe kind is also made on the distended part of the vessel or vessels, causing rupture; and, *thirdly*, that when this pressure is removed free hæmorrhage from the ruptured vein or veins occurs, and will go on until the tension of the effused blood equals that of the blood inside the vessel. Fortunately the pressure restraining the hæmorrhage is not usually taken off till the child is born, and the development of the hæmatocele is therefore delayed till after the labour is finished; but if, by cessation of the pains or long intermissions, the fœtus recede and pressure thereby be removed, then, of course, the bleeding will occur before the birth, and may become an obstruction to labour.

As to treatment. When the hæmatocele is developed after the termination of the labour, the first thing to be done is evidently to soothe pain by opiates. This enables the patient to keep from tossing about and straining, and so is favourable to the plugging up of the lacerated wound in the vessel. I never saw a more signal instance of the relief afforded by morphia than in those two cases. Then, where practicable, a pad of some soft material may be applied, that its support may do something to prevent rupture of the thrombus and the consequent danger of increased hæmorrhage.

After the tumour has ceased to enlarge, and when there is a likelihood of the injured vessels being sealed up, authorities differ as to what ought to be the treatment. Fordyce Barker advises early opening. Only one in ten cases, he says, get absorbed, and he advises early evacuation of the blood by an incision into the tumour. In my second case the matter was taken out of my hands by spontaneous rupture; but in the first case I think I did well to wait. The hæmatocele was causing no disturbance of the general health. Until it was interfered with there was no indication of its giving rise to anything more than local inconvenience; and it was quite evident that the further we got away from the day of the labour the further we were from the peculiar sensibility of a puerperal woman to septic influences. If, by earlier interference, the patient had got her temperature raised to 104° during the first two or three days of her confinement, she would probably have been in considerable danger. But, of course, if at any time fever should be set up by the effused blood, then the sooner a free incision is made and a clearing out of the sac is effected the better.

I shall say little of the treatment of those cases in which the hæmatocele is developed during the progress of the labour. I have only seen one such; she was the patient of a medical friend. We at once applied the forceps and delivered the woman. This seems to me the only rational treatment. By waiting you very likely find that the swelling becomes a serious obstruction to the passage of the child, and that in all probability the thrombus bursts and gives rise to frightful hæmorrhage.

I cannot help thinking that early application of the forceps in my two cases might have averted the formation of the hæmatocele. If each of the labours had been shortened by two hours, there might have been no rupture of bloodvessels. The more frequent use of midwifery forceps of late years is a great improvement. Severe and protracted labour must surely have injurious effects, although the wonder is that it has not more. We know, when we shorten a labour by the forceps, that we are saving our patient from some hours of suffering, but we do not always know from what evil results of that suffering we are also saving her. And this illustrates what I many years ago heard said by a friend, a former president of this Society, that a medical man often does more good to his patients than he himself is aware of.

ARTICLE VIII.—*Fibroid Tumour of the Uterus complicating Labour: Delivery with Forceps.* By WILLIAM SANG, M.B., Broughty Ferry.

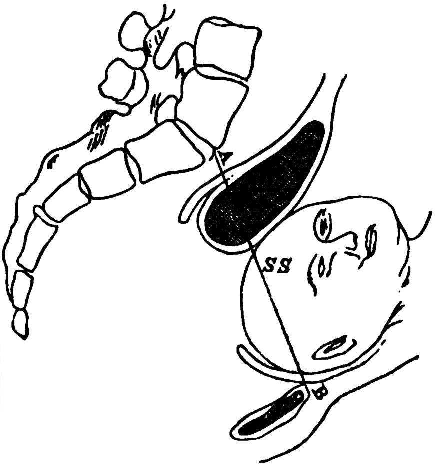
(*Read before the Edinburgh Obstetrical Society, 9th March* 1881.)

CASES of tumour of the uterus complicating labour are happily not often met with in the routine of practice. After ten years' experience, this is the first time I have met with such a complication and had to deal with it. Having examined the few works at my command and been unable to find any statistics regarding the relative frequency of such cases, I conclude that they are not very often encountered, and that their relative frequency cannot be great. Any notice at all on this point which I could find referred to cases in which, by the practice of a little dexterity, the mass had been pushed out of the way, or cases in which craniotomy had had to be resorted to, and been performed with more or less difficulty. On this account I have taken the liberty of bringing before you the following notes of a case which I had to deal with the other day, and which presented some points of interest, and may deserve a little consideration from others as well as myself:—

On the evening of Saturday, 22d January 1881, I was summoned to attend Mrs B. in her sixth confinement. She had taken ill in the morning, and had been suffering from labour pains during the greater part of the day.

Previous History.—She is a healthy woman, of average height and build, about 39 years of age, and has been eight years married. Her first child was born in England; the labour was tedious, and had to be finished with forceps. Her second and third confinements took place in Dundee, and she states that they were both easy and normal. I attended her in her fourth in July 1877, and also in her fifth on 19th August 1879. Both labours were rapid and easy, the latter especially so. No trace of tumour was noticed then; but, no symptom of such a complication being present, the uterus was not so carefully explored as to lead me to say positively that it had not then originated. She has never had a miscarriage, hæmorrhage, or any serious illness, and both her parents are alive and in good health. During the present pregnancy she has been fairly well, but, if anything, felt weaker than usual, especially in the lower part of the back opposite the lower lumbar vertebræ. The fœtal heart was heard. The abdomen was large, and the head seemed to be presenting.

7 o'clock P.M.—*Examination per Vaginam.*—The passages were moist and well lubricated with tenacious mucus; the membranes were ruptured, and the os and cervix uteri were flaccid and well dilated. At the brim, on the posterior wall of the uterus, and about an inch above its posterior lip, was felt a large, fleshy, fibroid mass. It seemed, as far as I could judge, to be from 1¼ to 2 inches in thickness, occupied the conjugate diameter of the brim, and extended more to the right sacro-iliac space than to the left. Anteriorly the fœtal head was felt entering the brim, and with some little difficulty could be recognised occupying the first position, viz., occiput to the left and anteriorly, *or rather between that and the transverse diameter.* Indeed, so peculiar did the whole thing feel that the cleft between the tumour and the head made me think that I had a breech presentation to deal with, it felt so like it; but after feeling carefully all round and coming upon the *anterior fontanelle*, the true nature of the case became manifest.



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This sketch will help to illustrate the case as far as the position of the tumour is concerned. It is an imaginary section through the brim of the pelvis perpendicularly and in the conjugate diameter, which is represented by the line A B. The tumour is darkened, and SS is the line of the sagittal suture.

The patient complained of pain during the examination, and more especially when the swelling was touched. She said it was more tender than any other part. I made up my mind to remain with her for a few hours and see how she would get on. During the greater part of that time she remained in bed in the knee-elbow position, and when asked why, answered "that she thought she was easiest in that way." She also complained of slight dysuria.

One attempt was made to push back the tumour in this position, but it was too firmly fixed. The pains were numerous, but very weak and irregular.

11 *o'clock* P.M.—Another examination was made per vaginam, *i.e.*, four hours after the first. There was no change in the condition of things; the head had made no progress in descent, but seemed to remain fixed. I made up my mind now to finish the labour, and in the first place to give the forceps a fair trial. The patient was therefore put completely under the influence of chloroform, and a catheter passed to make sure that the bladder was empty. The rectum was empty. Other minor points preparatory to using the instrument were attended to. The state of matters at the brim were again carefully explored while the patient was under the influence of the anæsthetic, to make sure that as correct an appreciation of the case as possible had been obtained.

The lower blade of Simpson's double-curved forceps (the instrument which I have been in the habit of using) was now introduced, and slipped into its position quite easily. The upper blade was then lifted up and introduced. Some difficulty was experienced in getting it into position opposite its fellow, and to lock easily. As an accurate and easy lock was of great importance in a case like this, a little time was taken up in securing it.

Everything being now ready, steady traction efforts were made as near as possible in the line of the pelvic axis, at short intervals, commencing very gradually, and increasing the strength of each pull as time went on. The head seemed to make little or no progress for a considerable time; and as some efforts at traction more decided than I had been using threatened to bring the mother's body along with them, I found it necessary to plant my right foot on the patient's left hip in order to fix the pelvis. This had the desired effect. The process of extraction occupied an hour and fifteen minutes; indeed I was almost beginning to despair, when the head cleared the obstruction and descended into the pelvis. One slight pull more brought it beyond the external parts. The instrument was now removed. During the whole time it had been used purely as a tractor, no oscillatory or pendulum-like movement being resorted to, and no compression was made upon the fœtal head through the handles. At this stage a medical friend arrived. My arms being tired, he kindly finished the case. The head remained about fifteen minutes apparently fixed before the movement of external rotation took place, after which the body was quickly expelled. The secundines came away quite easily, the uterus contracted firmly, and there was not more than the usual amount of hæmorrhage. On examining the uterus the tumour seemed to occupy a large portion of its posterior wall. It was smooth, of an ovoid form, slightly flattened antero-posteriorly; marked on its anterior surface with a depression or grooved hollow, not deep, but distinct; had a hard, fibrous feeling, and was apparently submucous. Its longitudinal diameter would measure about 3 inches, and its transverse rather over 2. I did not care for fingering it more at the time. The binder was applied, and an opiate left with the friends, to be given during the night.

The umbilical cord pulsated when the child was born; but though efforts for its resuscitation were tried, they were of no avail. The child was large and well formed, above the average weight, I should say, from its appearance; the head was also large, and had been grasped by the forceps in the oblique diameter, the mark of the upper blade being over the right temple. The face, especially towards the left side and temple, was much blackened and ecchymosed. I regret now that measurements of the head had not been taken then; on the following day it was too late.

Sunday, 23*d*, *forenoon*.—Patient passed a fair night, but was much pained. Pulse 120, weak; temp. 101°. Has not yet passed urine. Lochial discharge normal. To have milk diet, potass water, and an opiate at bedtime.

Monday, 24*th*.—Passed a good night; not so much pained. Pulse, 100; temp. 99°·5. Feels quite comfortable, but weak. Has passed urine several times.

Wednesday, 26*th*.—Condition same as on 24th. To have oil to-morrow morning.

Friday, 28*th*.—Medicine acted freely yesterday; feels weak in consequence.

Sunday, 30*th*.—Improving. Pulse 96, still weak and compressible; temp. 99°. Not much discharge on digital examination. Os uteri contracting. The lower border of the tumour could be felt. The fundus uteri was about three inches above the pubes.

Tuesday, 1*st February*.—In every way improving. Pulse 92; temp. normal.

Saturday, 5*th February*.—Doing well. Uterus felt above the brim, and the right side with more difficulty than it was a week ago. The fundus is still about 2 inches above the pubes.

Saturday, 12*th February*.—Patient is out of bed and moving about the house, so examination not made.

Saturday, 19*th February*.—Exactly four weeks since confinement. The fundus uteri is just about the level of the pubes. On internal examination the os is contracted, and merely admits the tip of the finger, the tumour being touched with difficulty. The sound passes on each side of the mass into the uterine cavity, which measures not more than 3 inches. The point of the instrument moved freely in the fundus of the cavity. The tumour is evidently much smaller than it was when labour took place a month ago. I think the diminution seems to be more marked transversely than vertically. The patient has had no specific treatment.

Remarks.—I have described the case minutely, even at the risk of being tedious. It is a rule preparatory to using the forceps "to be assured of their necessity." It might almost be said with equal force that no one having used them, especially in a troublesome case, should lay them aside lightly and without reflecting carefully on the condition of things that had to be contended with, whether the principles which guided him bore the test of scrutiny, and, all things considered, was the treatment adopted the best one in the circumstances for the patient. Before such a question can be answered, a minute knowledge of the facts is necessary.

In this case there were two factors retarding labour:—

1st, A tumour obstructing the maternal passages.

2d, Partial inertia of the uterus due to its presence.

The first consideration, then, is, having waited four hours, whether wait longer in the circumstances or finish the labour? I think the balance of evidence was in favour of the latter course (the one adopted). Suppose interference had been withheld till morning, the probability was that the same amount of interference would have been necessary in the end, and would have to be carried out on a patient so much the more exhausted by the delay.

Having decided to finish the labour, how was it to be done—by means of forceps or turning? Authorities[1] are agreed that 3¼ inches is the narrowest conjugate in which we can expect to use the forceps successfully, and the same authorities agree in considering 3 inches as the minimum in which turning should be attempted. The conjugate, so far as could be judged, was too narrow for the forceps; but then the narrowing was caused by a fleshy body movable within certain limits, consequently it might be enlarged by the compressibility of the body. Against turning there were two considerations:—

1st, The membranes had ruptured early, and the liquor amnii had escaped more than four hours previously.

2d, The walls of the uterus were adapted pretty closely to the body of the fœtus.

Taking these things into account, I resolved to try the forceps. If they took a firm hold and locked easily, the indications were in favour of success. If I had failed in getting a good easy lock, then I would have attempted to turn. Again, turning in a case like the present must be fatal to the child; the forceps not necessarily so.[2]

Regarding the mechanism of labour in this case, I think it must be considered as much the same as the mechanism of a case with a contracted conjugate diameter at the brim.

In a contracted conjugate diameter the first step, according to Dr Matthews Duncan,[3] is lateral flexion of the fœtal head, by which the sagittal suture approaches towards the sacral promontory (and the greater the contraction of the conjugate the more marked is the flexion), to which the side of the head adapts itself, and from this point as a pivot lateral flexion in the opposite direction, and rotation of the occiput in the pubes, take place, until it, the occiput, is brought down under the symphysis, with the long diameter of the head in the plane of the conjugate. The occiput now becomes fixed, and the forehead rolls off into the cavity of the pelvis.

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[1] Leishman's *System of Midwifery*, page 629. Barnes's *Obstetric Operations*, page 72, 2d edition.

[2] *Lectures on Obstetric Operations*, Barnes, 2d edition, page 75. In answer to the question, What is the extreme degree of narrowing that will admit the useful application of the forceps?—"I have stated it in the table at 3¼ inches, but it cannot be defined absolutely. A head slightly below the normal size, and less firmly ossified than usual, may be brought through a conjugate diameter of only 3 inches. And as we cannot know with precision what the properties of the head still above the brim are, we are justified in making tentative experimental efforts with the forceps before resorting to turning, which is perhaps more hazardous to the child, or to craniotomy, which is destructive to it. This uncertainty or want of fixity in the relations between the head and the pelvis compels us to leave a range or borderland of debatable territory between the more clearly recognised or conventional limits assigned to the several operations."

[3] *Obstetric Transactions London Society*, vol. xx.

What the first part of the act in this case consisted of I am not in a position to say, but the result of it was that the left side of the child's head became adapted to the tumour immediately above its most prominent part, and with the sagittal suture about where I have shown it; and from this as a pivot the occiput made its descent by a rotation movement to a point behind the symphysis, when it in turn became fixed and acted as the centre of motion to slip the forehead off the tumour.

I think the position of the sagittal suture at the commencement, the descent of the occiput which was observed, the jerking of the head off the obstructing mass, the ecchymosed condition of the left side of the child's head and face, and the depression and groove in the tumour, all tend to point to what I have described as the probable mechanism in this case.

ARTICLE IX.—*Delivery by the Breech through a greatly Narrowed, Flat, Rachitic Pelvis.* By WILLIAM TURNER, M.B., M.A., Glasgow Maternity Hospital.

(*Read before the Edinburgh Obstetrical Society*, 27*th April* 1881.)

CASES have been from time to time recorded where a fœtus at full term has survived its transit through a pelvis narrowed in its conjugate diameter beyond the limits that are ordinarily recognised for the safe delivery of a mature child, but such instances are, for the most part, too ill-authenticated to be readily accepted as true, and too rare to lead to any alteration in current rules of practice.[1] Bearing in mind the conclusions arrived at by Sir J. Simpson, so strongly advocated by him in his teaching, and so fully discussed in his well-known series of papers "On Turning as an Alternative for Craniotomy and the Long Forceps in Deformity of the Brim of the Pelvis," forceps would appear to one to be, in the minds of the younger practitioners at least, too exclusively the favourite operation in tedious head-first labours, whatever the cause of obstruction may be.

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[1] In searching the records for information regarding such cases, the following were the most noteworthy examples that I met with :—

Lachapelle (*Pratique des Accouchements*, Paris, 1825, eleventh memoir, p. 429) relates a case where she delivered a child through a conjugate 2·75 French inches. Forceps had slipped, version had been performed, and the head extracted suddenly. A large girl was born alive, but did not live long. (French inch = $1\frac{1}{8}$ English inches.)

Danyan (*Journal de Chirurgie*, par Malgaigne, Janvier 1843) gives an account of a woman whose pelvis was found after death to measure 2·75 French inches. Of nine children which she bore one was said to have been delivered alive, and it presented the breech. All the others were born dead.

In a case described by Simpson (*Select Obstet. Works*, p. 394), and which appears more than any other to have given origin to his ideas on this subject, he delivered by version a child whose head was deeply indented. The bitemporal diameter of the head at the seat of indentation was carefully measured, and was found, when held compressed by the fingers, to be not more than $2\frac{1}{4}$ in. The child gasped several times, but full respiration could not be established.

The following case, I trust, will be of interest to the Fellows of this Society as bearing out Simpson's views, and as demonstrating more satisfactorily, perhaps, than has often hitherto been done the extreme degree of pelvic contraction which is compatible with the safe passage of a well-developed child:—

M. C., a primipara, about 30 years of age, and unmarried, was admitted to the Glasgow Maternity Hospital on 20th February at 10 P.M. The patient stated that she was at the full term of her pregnancy. It was ascertained that she was a native of Enniskillin, and that she had crossed from Ireland to Glasgow two days previously, accompanied by her avowed future husband, who had come to Scotland in search of employment. On landing she had been deserted by him, and had remained in a destitute condition until she found refuge in our hospital. (These facts I have mentioned as bearing on the subsequent history of the case.)

On admission the patient appeared to be well-nourished and of healthy constitution. She was 5 ft. 4 in. in height, and had well-formed limbs and chest. Nothing in her features or gait indicated the presence of the rachitic diathesis. The expression of her face was vacant, and she either did not understand, or did not care to answer, the simplest questions until they had been several times repeated, and her answers were such as to give little information. In short, she presented symptoms very much akin to those of dementia in a mild form.

The patient having been placed on a delivery-bed (she had already been in labour for about five hours), I proceeded to make examination of her abdomen. On inspection the uterine tumour was noted to be somewhat unusually prominent; its contractions were of average duration and of more than ordinary strength. By external palpation limbs were felt in the left groin, but no head lay in the inlet to the pelvis. The fœtal heart beat at 142 per minute, and was best heard on the right side a little below the level of the umbilicus. On examination per vaginam, the margin of the outer os was found as large as a florin, soft and dilatable. The sharply defined heel of the left foot was easily recognised, dipping into a shallow bag of membranes. Very pronounced bulging of the bodies of the upper sacral vertebræ was noted, and I had forceps then brought to hand in anticipation of difficulty with the aftercoming head. No actual measurement of the pelvis, however, was made.

In half an hour the os was felt to be fully half dilated. The membranes were ruptured during that examination, although great care was taken to avoid such accident, and the left foot descended into the vagina. By its side, also, a protruding loop of cord was felt. It pulsated at the rate of 78 per minute, but the number increased as the uterus relaxed (the pulsations of the fœtal heart, ascertained at different parts of the labour, varied from 60 to 142 per minute). An attempt was made to replace the cord in the uterus, and to retain it there by drawing down the thigh to occupy the lower strait of the uterine cavity, but it failed chiefly on account of the length of cord prolapsed. The thigh was therefore left to dilate the cervix as far as possible, and no further interference was made for half an hour, except to feel the pulsations of the cord.

The os having now become almost fully dilated, and the right foot being easily accessible, the latter was seized and brought to the vulva beside its neighbour. Chloroform was then administered, and the urine was drawn off by catheter. The patient lay midway between the back and left side positions, with the right thigh raised, and both knees flexed towards the abdomen. A single strong pain, aided by slight traction, sufficed to expel the child's body from the uterus.. Both arms were found extended above the head, and the head itself was in the position of extension, so that it was needless to persevere in attempts at extraction until these conditions should have been remedied. The pulsations of the cord were 60 per minute, giving indication for rapid completion of delivery. The arms were with difficulty reached and brought down, but still the head would not yield to the combined force of traction and pressure exerted from the abdomen. The chin was found high up on the right side, and without using much force it was brought down into such a position that the head now lay directly in the transverse diameter of the pelvis, neither extended nor flexed on the trunk. It resisted further attempt at flexion.

I now enveloped the child's body in a towel, to prevent my hands from slipping, and allow of more effectual traction. The body was grasped by the right hand in the region of the loins, while the left hand laid hold on the shoulders. Pressure on the abdomen was maintained constantly during the pains by a trained nurse whom I had previously instructed as to how it should be applied; while continuous strong traction was also at such times kept up, with the child's body now drawn backwards on the perineum, now pulled forwards towards the pubis. No lateral traction was employed. On the last occasion, after less than four minutes' continuous application of this taxis, the head yielded somewhat suddenly. Forward rotation of the occiput took place abruptly, and delivery of the head was easily and speedily completed. Artificial respiration was needed to supplement weak spasmodic inspiration of the child, who cried for the first time 7 minutes after its birth.

The after-birth was soon afterwards expelled entire. A straight tear half an inch in depth was found to have taken place in the left side of the cervix, which allowed the anterior lip to hang very versely into the vagina, but no other injury to the mother's parts was found. Thus the labour was completed 6½ hours after its onset, 1½ hours after admission, and 10 minutes after the head engaged in the brim.

Half an hour after delivery the mother had fallen into a sound sleep, from which she did not awake for several hours. The child was a female, 19 inches long, and weighed 6¾ lbs. It had all the appearances of a fœtus at full term. The bones of the head were well ossified and of normal rigidity. The head was somewhat elongated, and there was a reddened contused band on the scalp of the right side, extending from near the root of the zygoma upwards over the right parietal bone towards the greater fontanelle. There was nothing amounting to a depression, but the head was generally flattened on that side. A red line round the left side of the head indicated the level where it had been constricted previous to its yielding at the brim of the pubis. This line passed from the upper margin of the left orbit across the root of the zygoma, and compressed the left ear about ½ inch from its summit. There was no abrasion of the skin on any part of the head.

I regret that as my callipers was broken at the time no accurate measurements of the child's head were made immediately after birth; but the following are the measurements of the head taken twelve hours after birth, when the bones of the head had regained their natural conformation.

Diameters.	Occip.-front.,	4⅝	inches.
	Biparietal,	3¾	„
	Bitemporal,	3¼	„
	Bimastoid,	3⅛	„
	Suboccip.-breg.,	3⅞	„
	Occip.-ment.,	5½	„
Circumferences.	Occip.-front.,	13½	„
	Subocc.-breg.,	12	„

On the morning of the second day the upper right eyelid of the child was found to have become quite black. The discoloration was mostly on the inner half of the eyelid, and was accompanied by little swelling. It went through the ordinary stages of a black eye.

I shall not occupy your time by giving details of the subsequent history of the mother, but merely mention one or two prominent points to enable you to form some connected idea of the circumstances of her death, which occurred on the eighth day after delivery.

Nine hours after delivery the patient felt herself comfortable; her temperature and pulse were normal. For the first two days she suckled her child, but the quantity of milk in the breasts was very small. By degrees the temperature had reached 103° on the morning of the fourth day, and then for the first time the lochia were fœtid. There had been no rigor. The bowels were well moved with oil, and the vagina was washed out every four hours with 1–60 carbolic solution, but no fall of temperature resulted.

On the fifth day the fœtor persisted, and the strength of carbolic solution injected was increased to 1–40. So offensive was the odour that the vagina and cervix were explored to ascertain whether there might not be some sloughing of their tissues, but no such condition was discovered. The cervix was found contracted so as to admit but one finger with ease; and it had a fissure about ¼ inch deep in its left side. The uterus extended to within an inch of the umbilicus, and could be moved without causing pain.

In the evening of the fifth day the patient vomited some dark coffee-ground material. The abdomen had become more distended, but was still free from tenderness. The lochia, which were not entirely suppressed, had a highly offensive, gangrenous odour. Opium was given freely, and a blister was applied to the lower part of the abdomen.

On the sixth day, in the morning, vomiting recurred, and tympanitis had increased. The patient was removed to the isolation ward, and had 10 grs. of sulpho-carbolate of soda given her every four hours. Opium had to be used with caution, as she seemed unusually susceptible to its influence. Pain on making water was complained of, and the bladder was emptied with difficulty. About 40 oz. of urine were drawn off by catheter.

In spite of careful nursing and liberal nourishment the pulse had steadily fallen off in strength, until on the sixth day the administration of stimulants was considered necessary. Delirium also had supervened, and hiccough was a troublesome symptom. The patient, indeed, seemed to be entirely devoid of rallying power, and died exhausted on the 8th day.

The following is a record of the temperature and pulse taken during the puerperium:—

	Temp.				*Pulse.*			
Feb. 20th	Morn.	—	Even.	98·4	Morn.	—	Even.	72
„ 21st	„	98·4	„	100·2	„	80	„	86
„ 22d	„	99·4	„	102·2	„	102	„	118
„ 23d	„	103	„	103·4	„	108	„	136
„ 24th	„	103·2	„	104·6	„	128	„	130
„ 25th	„	102·6	„	98·6	„	124	„	90
„ 26th	„	100·8	„	98·8	„	126	„	124
„ 27th	„	100						

The post-mortem examination was conducted by Dr Foulis twenty-six hours after death, and the following is his report:—

External Appearances.—The body is well nourished. The interior of the vulva has a somewhat gangrenous aspect, with brown fluid escaping from it. On opening the belly there is observed a small quantity of purulent fluid lying amid the coils of the intestine around the uterus; and there is some lymph adhering to these coils and to the surface of the uterus and broad ligaments. The uterus is large and soft, reaching half way to the umbilicus. After removal of the pelvic organs, the length of the body of the uterus is found to be 4½ inches, its breadth 4 inches. On opening into the uterus by longitudinal incision, its walls are found to be flaccid. The thickness of the posterior wall is ¾ inch at its middle part. The lining of the uterus is soft and irregular, covered with more or less of grayish sloughing material. At the upper part of the right side of the anterior wall there is a large spongy-looking layer ¼ inch thick, beneath which the uterine wall is honeycombed with open veins. The cervix is about 1½ inches in length and 2 in. in breadth when slit up and unfolded. The inner os is marked off from the lining of the uterus by a distinct transverse line somewhat raised and injected. The outer os presents a notch ¼ inch deep on the left side, and a still smaller one on the right side. The lining of the vagina is rugose, and of a dark slate colour, mottled with yellow. It feels rough and hard to the finger. The right ovary has been the seat of punctiform hæmorrhage, and is coated with lymph. The left ovary, on being cut into, exhibits an injected interior in which there is a yellow, solid, irregular deposit. The bladder is in places injected, especially at the base, where there are punctiform hæmorrhages in the submucous tissue, and where also there is a patch as large as a halfpenny, of a dark red colour, coated with a thin gray slough. The spleen is large, soft, almost pulpy, dark maroon in colour. The kidneys are pale, their cortex slightly thickened, and on their surface are a few radiating venous radicles. The right kidney is smaller than the left. The other organs, so far as examined, showed nothing abnormal. Being interested in the pelvis, I had it removed in the manner described to us by Dr Hart, without disfiguring the surface of the body more than is done by the ordinary mesial post-mortem incision. I am thus enabled to submit the specimen in the fresh state for your inspection.

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It is an example of the simple flat rachitic variety of pelvis. The brim might be well described as reniform or bluntly heart-shaped, the prominence of the sacro-vertebral angle appearing to be the main element in its deformity.

The measurements are as follows:—

INTERNAL DIAMETERS.

At the Brim.		At the Outlet.	
Conjugate,[1]	2¾ in.	Conjugate,	4¼ in.
Transverse,	5 in	Transverse,	5¼ in.
Oblique,	4½ in.		

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[1] From the promontory of the sacrum to a point on the brim, half an inch to either side of the middle line of the pubis, the measurement is 2¾ in., owing to a furrow at the point of articulation of the pubic bones.

External Distances.

Between ant. sup. il. sp.,	10⅝ in.
Between iliac crests,	11 in.

The cavity of the pelvis is capacious, and is much wider from side to side than antero-posteriorly. The coccyx points rather abruptly forwards, owing to a sharp bending which had taken place chiefly at the point of union of the 3d and 4th sacral vertebræ. The ischial tuberosities are markedly bent outwards; the subpubic angle measures about 100°.

With regard to the mechanism of delivery in such cases a few additional remarks might be made. And, in the first place, it should be clearly understood that these remarks are intended to apply only to the flat form of contracted pelvis as in contrast with the uniformly contracted pelvis, the mechanism and treatment in which are entirely alien to the subject of the present contribution.

Continuous traction on the body of the child for a period of four minutes was kept up, at one time in the axis of the brim, at another in the axis of the outlet. More time, however, was devoted to traction in the axis of the brim. The head was thus made to advance in the one direction with the left parietal bone rotating round the promontory of the sacrum as centre, in the other with the right parietal rotating round the pubis as centre, the abdominal pressure serving to retain the advantage gained by each of these movements. The mechanism might be compared to the working of the appliance known as the weighing winch of a ship, or, more familiarly, to that of the chain ecraseur. The effect of traction, however, is not uniform on the two sides of the head. In front the head lies against the smooth flat inner aspect of the pubic bones, while behind it is in contact with a sharply projecting angle which would tend to indent it and prevent its recession. For this reason abdominal pressure will be most advantageous if applied to the anterior side of the head, and directed at first in the axis of the inlet. As the head advances through the brim and is doubling over the promontory, the pressure should be gradually altered to a direction perpendicular to the axis of the body, so as to take advantage of the unusually abrupt recession of the sacrum. To facilitate this taxis, and at the same time allow of traction being carried out in the desired directions, the best position to place the patient in would be the lithotomy decubitus, with the thighs brought to the edge of the bed. The assistant, standing or kneeling over the patient and facing the operator, will be less likely to injure the bladder by applying the palms of his hands from either groin, one on the forehead, the other on the occiput of the child. Moderate pressure, if well directed, will probably prove as effectual as powerful propulsion. Abdominal pressure, in a very limited degree, may also be exercised alternately on the fore

and hind part of the child's head, but no attempt need be made to produce the same effect by traction.

As to the advantages or disadvantages of this mode of delivery, it is evident that, had the child presented its head in the case described, instead of a lower extremity, its birth would have been at all events greatly delayed. The head would have rolled from side to side of the pelvic brim in vain attempts to enter it, and thus a more accurate conception of the amount and nature of the deformity of the pelvis would have forced itself on my mind, leading to an internal measurement of the conjugate diameter. Having ascertained that the conjugate of the brim was contracted to about 2¼ inches, and that a normally developed head was presenting, a consultation would have been called. Then, either the child would have been forthwith consigned to craniotomy,[1] or the choice would have lain between forceps and version.

The teaching of the present time in regard to the comparative merits of these two operations, forceps and version, in flat pelves, is still far from uniform in different schools. Many authorities advise that, as a general rule, the practitioner should be guided in his choice chiefly by the relative amount of his experience and dexterity in each. Some hold that the forceps operation involves less risk to both mother and child, at least in the lesser degrees of conjugate contraction. Others, again, admit that, *cæteris paribus*, version offers a better prospect of saving the child without increasing the danger to the mother, at least in the more extreme degrees of pelvic contraction. There is as yet no generally established belief that version is applicable to a lower range of contraction than forceps is, *i.e.*, that a child may be made to pass alive by version through a pelvis that would not permit of its safe delivery by forceps.

The case above described must, I think, be looked upon as lending support to such belief. If a still-born child could be procured with a head of similar dimensions to the one which passed safely, vertex last, through the pelvis before you, it would be interesting to know whether such a head could be drawn, vertex first, by forceps through the brim of the same pelvis. Such experiment would not, of course, be free from fallacies. Any advantage, such as the greater compressibility of the head of a dead child, and the absence of the soft structures of the pelvis, would be in favour of the success of forceps. But the question has been already abundantly answered in the writings of Simpson, Schrœder, Braxton Hicks, Goodell, Taylor of New York, and many others, where instances are recorded of version having been resorted to with success after forceps had failed. Against such evidence several possible arguments might be adduced by those holding opposite opinions, namely, first, that in these cases the forceps had not been sufficiently or fairly tried, of which there is no evidence; and, secondly, that with the present improved forms of axis-traction forceps no such failures shall occur. I know of no instance where version has been resorted to, with or without success, after an axis-traction forceps had failed;[1] but obviously some time must elapse before such an objection is valid. Further, it might be said in support of the advantages of forceps, that they have been applied to the aftercoming head to complete a case of version which would otherwise have failed. There is reason, however, to believe that the taxis employed, as in the case described, gives one as much command over the completion of delivery as does traction by the forceps. The amount of tractive force that can be exerted on a child's head by forceps applied to it has been estimated at 80 to 100 lbs. The amount of strain that can be put on the neck of a child by traction on its body, without yielding of the spinal column, has been estimated at, on an average, over 100 lbs.,[2] provided traction be uniform and exerted in the proper direction; while decapitation was found to take place when the weight was increased to 120 lbs. The amount of force that can be applied to the expulsion of the child by pressure on the abdomen has been described as comparable with the weight of the body of the operator. The combined force of traction and propulsion that has been exerted without injury to either mother or child has been estimated by Goodell at not less than 200 lbs. Such extreme propulsive force appears to be unnecessary in order to obtain the maximum advantage of the method, and to tend even to delay the passage of the head, as will be afterwards pointed out.

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[1] Barnes maintains that although an unusually compressible head may be drawn (after version) through a pelvis with 3 in. conjugate, the chances of the child being born alive under such circumstances must necessarily be small, and that 3¼ in. must be the limit of the operation. Playfair believes that when the antero-posterior diameter of the brim measures 3 in. or less, the destruction of the child is inevitable, unless the pelvis be so small as to necessitate Cæsarean section. Leishman affirms that when the conjugate diameter is less than 3 in., to attempt to turn would be to subject the woman to needless risk, while we may be confident that nothing but failure could attend our efforts.

But there are other and more important reasons for rejecting the aid of forceps, whether head or breech present.

If forceps be applied in flat pelves to the head coming last, the mechanism will be but slightly modified from that described most clearly by Goodell as occurring in the head-first application. The blades must grasp the head in either (*a*) its antero-posterior diameter, (*b*) its transverse diameter, or (*c*) its oblique diameter.

(*a*.) If the grasp is antero-posterior, the head is compressed in that direction at the expense of widening of its transverse diameters, however much elongation of the head is produced. It has also been stated that this grasp necessitates flexion of the chin on the sternum, whereby the biparietal diameter, instead of the shorter bitemporal, has to engage the conjugate of the pelvis. (This movement, however, need not necessarily take place, at least in head-last cases.)

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[1] In Prof. Simpson's paper on "Axis-Traction Forceps," a case is mentioned where his forceps succeeded in effecting delivery, and where in a former labour version had failed, and craniotomy had been performed.

[2] Duncan's experiments, *Mechanism of Natural and Morbid Parturition*, p. 140.

(*b.*) The biparietal grasp of the head is theoretically more advantageous, for the head is there made to assume an hour-glass constriction at the very part where constriction is needed; but, in addition to other practical difficulties, the most obvious one is that, even supposing the instrument to be applied directly in the pelvic axis, no ordinary forceps, though quite closed, could pass such a diameter.

(*c.*) If the head is seized in the oblique diameter, premature forward rotation of the occiput is thereby induced. The temple adjacent to the sacral promontory is apt to be "stove in," being caught between the promontory and the blade applied to the opposite temple, and hence the indentation which is familiar to most practitioners.

In children delivered by version, indentations must be less frequent, of less depth, and placed farther back on the head, as a rule, than when forceps have been used. The absence of indentation in the present case might be accounted for by the theory that probably sufficient time was not given for its development, as is usual in forceps cases of the same kind. The promontory, also, as is seen in the specimen, is well rounded transversely, not knuckle-shaped, as is frequently the case in flat pelves.[1] When it is considered that many (50 per cent., as stated by Schrœder) of the children whose heads have been so indented die either immediately or shortly after birth, the advantage of dispensing with forceps, if possible, must be apparent. The injury to the child's eye in the case related would at first appear somewhat anomalous, it being the right eye, which of all other parts was least exposed to injury. Most probably, however, the discoloration did not result from direct injury, but was due to extravasation of intra-cranial or intra-orbital origin.

To compare still further these two methods of delivery, it is well known how fruitless a proceeding it is to attempt to push a mouldable mass, such as a hernial protrusion, through a rigid ring (and that the difficulty is greater in proportion to the smallness and the rigidity of the ring) if the force be applied *a tergo.* This might be given as an argument against supra-pubic propulsion, seeing that the head is partially mouldable and the brim rigid. But if the pressure employed is sufficient only to retain the advantage gained by traction, as previously recommended, this argument is not applicable. On the other hand, it may, I think, be used as an argument against forceps.

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[1] Sir J. Simpson mentions a case where he delivered by turning a full-grown child through a flat pelvis of 3 in. conjugate, the head passing through in a flattened and compressed form, but without any depression or indentation upon it.

And, in the first place, it must be shown that the forceps acts not merely as a tractor in these cases, but also as a propeller, *so far as the head is concerned.* When the forceps grasps the head before traction is made, its effect is purely that of a compressor of the head, or, more correctly, of part of the head. The force of compression is conducted at right angles to the various tangents of the forceps curves. These forces may be resolved into their vertical and horizontal components, when it will be seen that the vertical forces exactly counterbalance each other. In other words, the force exerted on the head is equal at every part of the grasp. The forceps blades are thus so welded into the head that when traction is made and little resistance is met with, the head moves forwards, acted on purely by a *vis a fronte.* When, however, great resistance is met with, as in a contracted pelvic brim, the forceps being closed, and there being no means of exerting further compression, the head must recede, to a degree depending on the amount of resistance, towards the distal end of the forceps blades,[1] and is thus compressed vertically. The head must thus behave as if acted on by a *vis a tergo.* The head, therefore, not only expands excessively in one diameter to compensate for the compression of the grasp in another, but the parts outside the grasp are made still more to double over the brim by this propelling force, which further increases the obstruction. When forceps are applied in vertex presentation, the tips of the blades are in contact with the rigid base of the skull, which as it were completes the arch of their grasp and gives them more efficient propulsive power.

It is not maintained that this *vis a tergo* is such as to have a powerful influence in preventing the head from passing the brim of a moderately contracted pelvis, but there seems reason to believe that it is an element in the explanation of those failures of the forceps in cases where the contraction has been found not insuperable to the method of version.

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[1] The variety of forceps which is best calculated to prevent such recession is that of Sir James Simpson, with its long lightly-curved blades; but even these will be found inadequate for such a purpose, to a greater or less degree, in cases where there is great disproportion between the size of the passage and that of the child's head. It may be said that such forceps has been constructed so as to allow of the highest degree of compression and elongation of the head being made that is compatible with the safety of the child, and that therefore recession of the head cannot occur without injury to the child. In reply, I would state that I have on frequent occasions observed a considerable part of the proximal side of the forceps grasp unoccupied by the head while strong traction was being made.

The rigidity of the blades (necessary to prevent their slipping) is such that their tips, naturally one inch apart, cannot be separated, under great strain, more than half an inch from their normal position, the handles remaining closed; so that recession *beyond* the tips cannot take place to any great extent.

When the head is passing the brim vertex last, by traction on the body it is compressed equally at nearly every part of its circumference by a force acting at right angles to the surface engaged. This force is directed more or less upwards according to the amount of resistance; and as there is nothing constricting it above, elongation of the head is freely permitted.

Another circumstance unfavourable to the success of forceps, in flat pelves more especially, might be adduced. If we consider the relation between the available area of the brim and the area of the section of the head that has to pass it, it is plain that any encroachment on the former directly increases the difficulty of passage of the latter. The forceps blades, applied at either side of the pelvis, not only of themselves occupy space in this available area, but when they grasp the head they necessarily leave behind them a still greater space unused by the passing head. The blades of the forceps in ordinary use, when closed, are only three inches asunder at their widest part, and are so rigid as to admit of further separation, under strong force, to not more than half an inch. When we remember that the measurement from side to side of the flat pelvis is normal (namely, 5¼ inches) or above normal, the amount of available area wasted in the application of forceps is seen to be considerable; in the present case it would have been presumably not less than one square inch at either side.

Thus far the question of preferring version and avoiding forceps in the more exaggerated forms of flat pelvis, has been considered solely in regard to the interests of the child. It has still to be shown how much traction on the child's body, combined with supra-pubic manipulation, is warranted in the interests of the mother. It will be readily admitted that any amount of traction on the neck of the child that is consistent with its own safety is warranted consistently with the interests of the mother. In the four cases reported by Braxton Hicks,[1] already referred to, where version succeeded after forceps had failed, no abdominal pressure seems to have been employed. Three children were born alive, and no damage was done to any of the mothers.

Goodell states that, using all the manual strength (for traction) he could command, he has never seen the body part from the head. In nine cases of version recorded by him, in major degrees of contracted pelvis, eight children lived and one died. In ten cases of version, for considerable contraction, recorded by La Chapelle, all the children died, and four mothers died. Of five such cases, with slight contraction, all the children were saved; one mother died of peritonitis.

"It will scarcely be believed," says Denman, in advocating version, "how seldom this operation (craniotomy) is necessary under such circumstances, nor have I ever found any ill consequences follow the compression of the soft parts between the head of the child and the sides of the pelvis, if proper attention were afterwards paid to the state of the bladder and rectum."

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[1] *Guy's Hospital Reports*, 1870.

It is not difficult, in view of the history and post-mortem appearances in the case described, to believe that the operation had no direct influence in bringing about a fatal issue to the mother; that the result would probably have been the same whatever means had been adopted for her relief. The question to be solved is, can the operation be looked upon as the immediate cause of the peritonitis, or is the peritonitis to be regarded as of septic origin? The latter view derives strong support from the facts that for two days after delivery the patient remained well, the temperature keeping within limits that might be considered normal. The lochia, also, were healthy for the same period. When the lochia became fœtid the temperature rose, and when the former became more healthy the latter also became normal. Vomiting began on the evening of the 5th day, which does not favour a traumatic view.

Moreover, the gangrenous condition of the lining membrane of the genital tract, from which most probably the septic material was introduced into the system, must be attributed not so much to bruising of the parts as to the existing defect in the trophic condition of the tissues as an important predisposing cause.

The moral element alluded to, amounting in this case almost to insanity, was not to be overlooked in forming an estimate of the chances of recovery of the patient.

It would be interesting, and in a case such as this it would, I think, be practicable, to determine approximately the amount of alteration that has taken place by compression and elongation in the area of a horizontal section through the child's head at its widest part.

Ramsbotham[1] has estimated that a full-grown fœtal head may be lessened from side to side, without endangering the child's life, one-seventh of its own extent, or from 3½ inches to 3 inches. It is somewhat startling to find, in a later edition of Denman's *Midwifery*,[2] a statement made "that the extreme degree of diminution and change which the head is generally capable of undergoing (in its passage through the pelvis) is perhaps impossible to be determined; but it does not seem unreasonable to conjecture that it may be reduced *to* one-third of its original size without the destruction or even injury of the child from compression." I find, however, in an earlier edition, that the reading is "*by* one-third of its original size." There is nothing in the remarks preceding or following this statement to enable one to know what form of compression is meant, whether diminution in one diameter or another, or in the entire bulk of the head, to the extent of one-third. Nor does the author support this statement by evidence of any kind.

The rigidity of the bones of the head in children at full term

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[1] *Obstet. Med. and Surgery*, p. 25.

[2] Vol. ii. p. 49.

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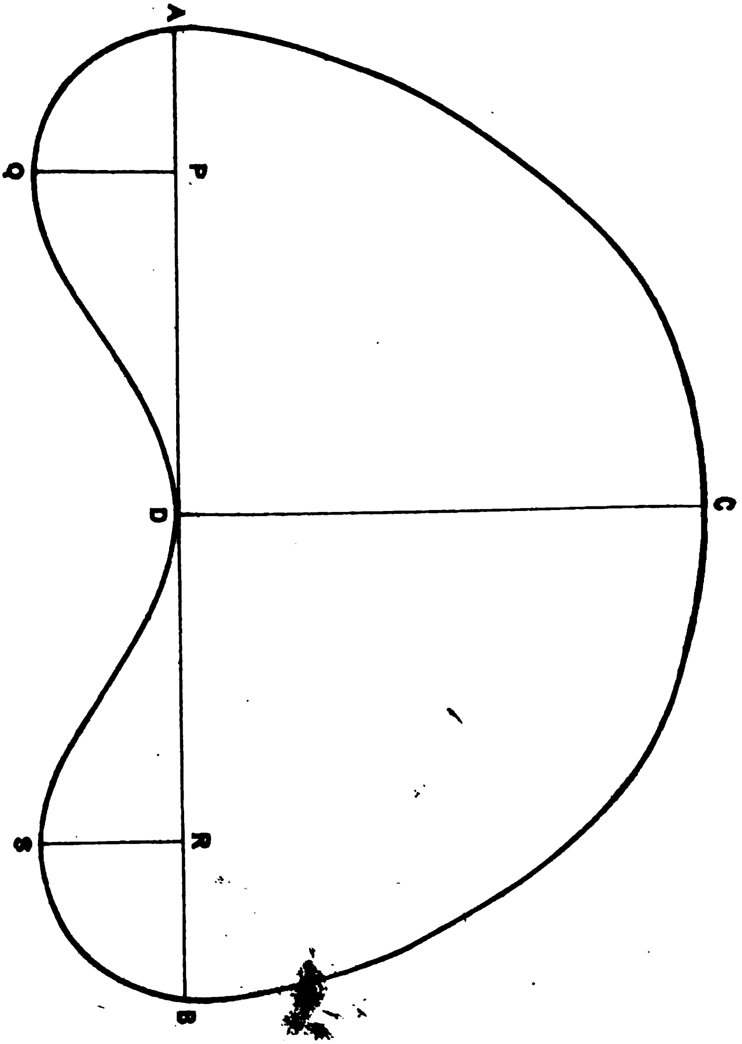

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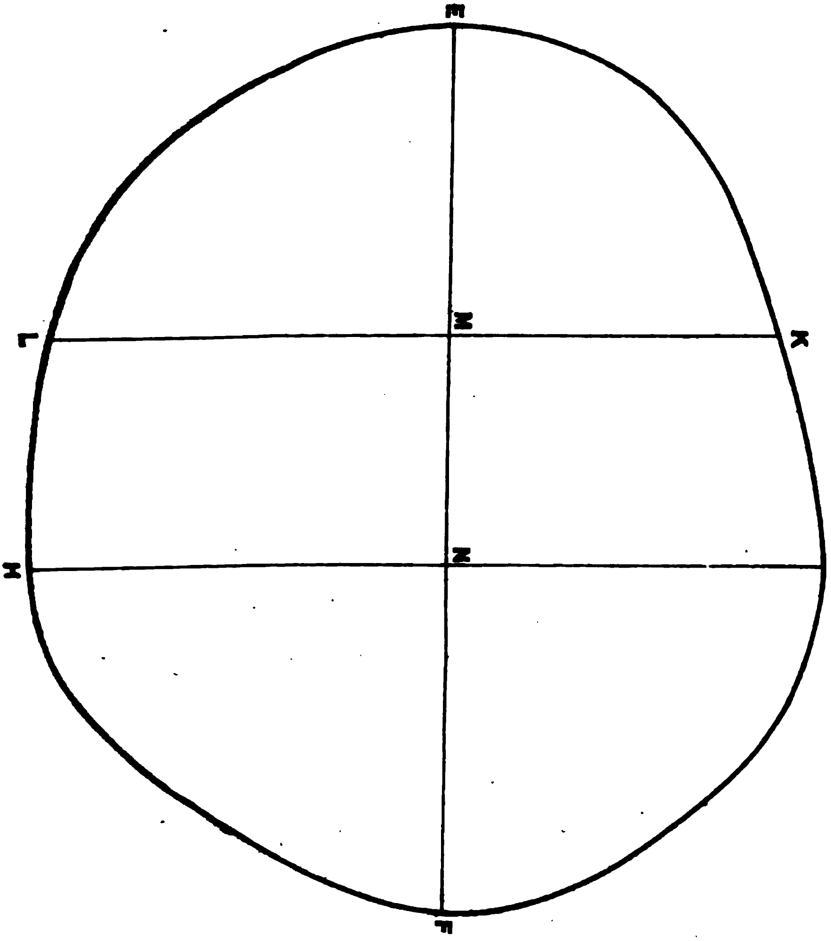

varies considerably, and their capacity for being moulded will vary accordingly. The head of the child in the present case was not more mouldable than the average of mature fœtal heads.

In the accompanying outlines there are represented as accurate tracings of the pelvic brim and of a horizontal section of the child's head at its widest part as the nature of the case will permit. The area enclosed by each outline, in square inches, has been estimated approximately in the following manner:—

Area of section of head = area of outline EKGFHL = area enclosed by semicircle with radius NF (which is equal to half the biparietal diameter) + area enclosed by semicircle with radius EM (which is equal to half the bitemporal diameter) + area of space KH (which is equal to area of a quadrangular space MN) × the mean between the biparietal and bitemporal diameters.

Area enclosed by pelvic brim = area of outline ADBC = area enclosed by semicircle with radius $\frac{AD + CD}{2}$ + 2 area enclosed by semicircle with radius PQ + 2 (an area which has been accurately measured, and estimated at about $\frac{1}{3}$ sq. in.)

Thus:— Sq. in.

$$\text{Area of semicircle GFH} = \frac{\pi r^2}{2} = \frac{3{\cdot}1416 \times (1\tfrac{7}{8})^2}{2} = 5{\cdot}52$$

$$\text{Area of semicircle KEL} = \frac{\pi r^2}{2} = \frac{3{\cdot}1416 \times (1\tfrac{5}{8})^2}{2} = 4{\cdot}14$$

$$\text{Area of space KH} = \text{MN} \times \frac{\text{KL} + \text{GH}}{2} = 1\tfrac{1}{8} \times 3\tfrac{1}{2} = 3{\cdot}93$$

Total area, ... = 13·59

$$\text{Area of semicircle ACB} = \frac{\pi r^2}{2} = \frac{3{\cdot}1416 \times (2\tfrac{5}{8})^2}{2} = 10{\cdot}824$$

$$2 \text{ Area of semicircle, with rad.} = \text{PQ} = \pi r^2 = 3{\cdot}1416 \times (\tfrac{5}{8})^2 = 1{\cdot}224$$

Estimated surplus area, ... = ·333

Total area, ... = 12·381

Hence the area enclosed by the bony brim of the pelvis is 1·209 sq. in. less than the area of the section of the head.

The *available* area of the brim, which excludes the space occupied by the soft parts, and also a great part of the sacro-iliac recesses, might be estimated as approximately equal to the area of the semicircle ACB. That is, the available area is less than the area of the section of the head which engaged by 2·766 sq. in.

From these calculations the head must have had its engaging area altered, by elongation and compression, to the extent of fully one-fifth part.

(I should mention that I lately saw the child at the City Poorhouse in a very thriving condition.)

ARTICLE X.—*A few Remarks made at Prof. Nussbaum's Clinic.* Translated from the *Aerztlichen Intelligenz Blatt* by JAMES SCOTT, M.B.

THE observations which I made to you on a recent occasion upon the influence of antiseptics in the practice of legal medicine have since been published, and have been favourably received by the members of the legal profession almost without exception, while my respected colleagues have reproached me with having gone much too far.

The point to which nearly all of them take objection is that I desire for antiseptics a legislative enactment which would make their employment compulsory in the treatment of recent wounds.

They reply to me that the State has no right to enforce the use of any particular method, but, as long as the surgeon has to bear the responsibility, he must be left free to choose which form of treatment he will use. I knew very well, gentlemen, that it would be much more pleasant for me to go on getting beautiful results with the splendid antiseptic system, and not to trouble myself about what others are doing. But my conscience compelled me to speak out and say what I daily observed, that fatal cases are constantly occurring which could be certainly prevented by the use of even the simplest forms of antiseptics. This state of affairs ought not to continue.

It is indeed a serious charge to make, that this mortality, and severe illnesses protracted to many weeks' duration, are entirely due to the surgeon; it is the truth, however, and I am in a position, as the senior surgeon of a large town hospital, to observe this more and more every day.

The more I think upon this subject, the less do I regret having made the assertions and claims which have been so much disputed by my colleagues.

If a head wound becomes septic, and, as unfortunately so often happens, a secondary meningitis kills the patient, when, according to the views which are no longer disputed, this secondary meningitis might have been prevented, shall the surgeon be allowed to excuse himself by saying that he is not a believer in the antiseptic system, or that he has treated the patient in strict accordance with the rules laid down in the hand-book of the renowned Chelius, or that he has dressed the wound after Korn's method, or applied one of Larrey's sealed dressings?

I expect he would receive the reply, that although these methods are all very excellent in their way, yet they are no longer applicable. Since it became known to the civilized world that these unfortunate results could be avoided by using the antiseptic method, surgeons have been blameworthy for any death occurring through their neglect.

The reply to this is, Quite right, but this does not prove that the State should make a law upon the subject. It is already known that the fate of a wounded person depends almost entirely upon the surgeon who first dresses the wound. It is well known that if the hand of the surgeon is not disinfected, either this, or the dusty charpie, or the adhesive plaister may infect the wound and bring about a fatal result, which might with certainty be avoided by using antiseptics; and as this is undisputed, there is no need for legislation in the matter.

Gentlemen, as I have been so much abused because I have, notwithstanding all this, asked for legislation in favour of antiseptics, allow me to lay before you a few facts as to ordinary practice, and then judge whether I have gone too far.

Who is it, I ask, that applies the first dressing to most of the seriously wounded and casualty cases? Who binds up the fresh wounds of the mason who falls from the roof? Who first dresses the wounds of the child who is run over in the street? or of the young rough who gets stabbed in a drinking-house? Is it not almost always a barber or barber's assistant, neither of whom can have any knowledge of the great surgical reform? There is no skilled surgeon waiting in the street to attend to the mason who sustains a fall, but some person runs to the nearest barber's shop, and the barber or his assistant comes and helps, and must help. And what do they do, I ask you, gentlemen? They do to-day exactly what was done fifty years since. They lay upon the wound charpie and adhesive plaister, which are now known to be dangerous and poisonous, and thereby, as we know from the experience we now have, frequently set up septic processes which the competent surgeon who is called in at a later stage cannot always control; and so it happens, as it did fifty years ago, that trivial head injuries contract erysipelas after five or six days and prove fatal in about a fortnight—injuries which would, with a suitable dressing, recover rapidly and without risk.

Shall this routine practice continue to go on, or will you forbid that the barber should be brought from his shop, which is conveniently near, and allow the injured person to wait for two or three hours until an efficient surgeon can be found to dress his wounds? Can you expect that a barber's assistant, who is running about the city all day shaving people, should study my *Guide to Antiseptics*? or, if he did, could he understand it?

Under these conditions, has the State no right or no call to do away with these routine customs so dangerous to life? Is the State not entitled, nay, called upon, to pass some such law as the following?—"Any person summoned to treat an accident case or wound must no longer close it up with charpie and adhesive plaister, nor examine or disturb it with a finger which has not been disinfected; but, after the surgeon has washed his hands and also the wound with some disinfectant (for which purpose a 5 per cent.

solution of carbolic acid seems to be the most convenient), the wound must be thoroughly protected with an antiseptic dressing. Such dressing may consist of carbolic jute or wadding, salicylic jute or wadding, chloride of zinc wadding, or some other well-known antiseptic material."

Gentlemen, I am thoroughly convinced that such a law would save every year, in our own city alone, the lives of dozens of wounded people, and deliver hundreds from a tedious and dangerous suppurative process.

If the State has not the power to forbid the use of dangerous methods of rendering first aid, and to substitute one which is so beneficial and so easily managed, I regret its inability to do so.

You are as familiar with the state of matters as I am; you know as well as I do that a great number of cases of injury come into our clinic which have been dressed in the first place by a barber or his assistant; and you are also well acquainted with the risks which such cases often run, and the amount of trouble we have to overcome these unfavourable conditions; nor, indeed, do we always succeed in doing this. If, however, the dressing has been properly done at first, it effectually prevents the onset of these unfavourable conditions. I thought the time had now come to insist upon this.

If the authorities have power to dictate to a midwife what she must have in her bag when she is called to a confinement, I do not see why they should not also be able to say what the surgeon or barber must have in his case when he is summoned to treat an injured person. The first dressing is usually so easily applied that any barber's assistant might be able to do it.

It is certainly easier and cheaper to apply a pad of charpie and some adhesive plaister. The antiseptic dressing which a barber would apply under such circumstances would not, however, cost more than half a mark. Dressings for wounds have become now altogether very complicated and expensive. Formerly cheap adhesive plaister and charpie, which the ladies picked in their leisure hours and gave to the surgeon, were employed, and dressings seldom cost many pence. Now, the annual cost of the material for dressings which I employ exceeds 30,000 marks. There is certainly a great difference between the two. It is also the case that an injury with the treatment of which a surgeon would formerly have been engaged for thirty or forty days frequently heals up now in five or six days, and the surgeon makes very little out of it. But surgeons can and may state their expenditure, and no medical jurist would refuse to remunerate more highly such speedy and effectual assistance. Furthermore, surgeons do not exist merely for the purpose of making a comfortable income, but that they may render assistance to the sick and wounded "tuto, cito, et jucunde."

Part Second.

REVIEWS.

A Treatise on the Materia Medica and Therapeutics of the Skin. By HENRY G. PIFFARD, A.M., M.D., Professor of Dermatology, Medical Department of the University of the City of New York. New York: William Wood & Co.: 1881.

A NEW idea as applied to a special subject has been started in this volume, and carried out with some degree of success. In the first place, a list of most of the drugs which have on any authority been credited with an action on the skin is given, each medicinal agent being considered under four heads—A. The effects on the healthy skin that follow the ingestion of the drug; B. The effects produced on the healthy skin by the local application of the drug; C. The cutaneous affections in which the drug has been found curative or useful when administered internally; D. Those in which it has proved useful when locally applied.

In the case of many articles, however, observations are wanting on one or more of these heads. In many instances curious and interesting statements are recorded, the originals of which are not easily accessible. Sometimes, on the contrary, one is disappointed at the brevity with which the notice of an action is despatched, and no very precise idea is conveyed to the mind of the reader. The drugs are arranged alphabetically, and there can be no doubt of the value of such a list for the purposes of reference. The author has endeavoured to fill up some of the blanks of the first part in the second, which consists of a concise account of most of the diseases of the skin, with special reference to their treatment. Sometimes the applications of the drugs have a close resemblance to the Hahnemannic doctrine of similars. Thus, under the head of amyl nitrite, Piffard, following Ringer's suggestion that the flushings so common at the menopause are relieved by it, says he has found it useful in the flushings of the face which accompany and aggravate rosacea. He administers one to five minims of a one per cent. alcoholic solution in a teaspoonful of water, or gives granules of milk sugar saturated with the pure nitrite. "A closely-corked vial of such globules is the most convenient form for the administration of the remedy, one or two being taken at a dose." It is dangerous at the present moment to speak of homœopathy, but we may remark that in such doses nitrite of amyl may be safely, we do not add beneficially, employed. We were under the impression that its essential virtues for the relief of angina, whether these depend on its power of dilating the arterioles or on some nameless and occult influence, existed in freshly prepared specimens alone, or at least in such kept hermetically sealed, as in Martindale's capsules. Certainly it soon loses its power of causing the face to burn and the heart to throb, even when kept in a closely-stoppered bottle, and we doubt if its active properties would be retained by sugar granules. Whether amyl nitrite does act on the theory of similars or not, if it really can in any case relieve those flushings, a positive gain has been made in therapeutics, as, so far, no other remedy seems to influence them at all. The question can easily be settled, but a specimen of the medicine physiologically active must be used for the purpose.

Under the head of the tartrate of antimony a single line is all that is devoted to its internal employment, while more than half a page is filled with its external uses. It is stated to be useful internally in squamous diseases, on the authority of Tilbury Fox and others. Malcolm Morris, however, has recently advocated its use, as also Dr Cheadle, in acute eczema, and we can corroborate the accuracy of this statement. Given in doses of $\frac{1}{16}$ of a grain, or a little more, three times a day, it certainly shortens and alleviates the acute stage of eczema. Piffard finds the black sulphide of antimony—a salt, by the way, very insoluble in water, and which was much in use by the older authors—to resemble arsenic in its effects, and to be of special use in affections characterized by epithelial proliferation and hypertrophy. An agent which will exert a modifying action on epithelial growth when perverted, as in cancer, is what at present is desiderated. Have we found it in the black sulphide of antimony? The peculiarly irritant effects on the skin of some specimens of tincture of arnica, or on certain skins, has caused a valuable discutient remedy to be looked on with disfavour, particularly at Vienna. Some have thought that spirit extracts from the flowers some acrid principle which water does not, or that some flowers contain more of this than others. The flowers of arnica are frequently infested with the larvæ, eggs, and remains of the Atherix maculatus. Mercier not only obtained from these, when isolated, an extract which was acrid and irritating, but found that preparations made from arnica flowers free from insects did not cause untoward effects. All the cases of arnica poisoning which have fallen under Piffard's notice followed the use of the officinal tincture of the flowers, while, on the other hand, he has employed a tincture of the root frequently without accident, and adds, "If a wider experience confirms the suspicion that the atherix, and not the arnica, is really the cause of the local irritation, the use of preparations of the root should supplant that of the flowers." When, during an Irish famine, the peasants of some districts, other food being defective, consumed large quantities of *Brassica napus*, blotches of deep red resembling burns appeared on the backs of the hands and dorsa of the feet, also similar blotches on the nose and forehead, sometimes followed by troublesome ulceration. How far the want of other articles of

diet, and other circumstances of destitution, had to do with the occurrence of these blotches is not stated, nor, perhaps, could be ascertained; but the locality, which is that special to erythema multiforme, deserves notice, and, indeed, may help in solving the cause, some day, of this curious disease. Under the head of mercury, triturations of the metal with milk sugar are recommended as much more uniform and reliable than hyd. c. cretâ, the particles being finer and more equally diffused; hence the desired effect can be accomplished with smaller doses. An example of this mode of using medicines has been set by the British Pharmacopœia, which contains a $\frac{1}{10}$ milk sugar trituration of elaterium, "and pepsine manufacturers in America usually supply their product in this form, and not as pure pepsine."

In the intermediate space between the materia medica and therapeutics of the skin some general observations are made on drugs, on electricity, and on the actual cautery, but these contain nothing novel. Under the heading of diathesis Piffard describes what he terms the rheumic diathesis, which is very much of an old friend under a new name, that is, it corresponds in some degree to the dartrous diathesis formulated by Hardy, and acquiesced in by Hutchinson with some slight variation. Piffard believes this diathesis to be the predisposing cause of eczema, psoriasis, and pityriasis, and that the blood condition which underlies it is probably similar to, if not identical with, that concerned in the production of rheumatism and gout. The third reason for the choice of the name, that the vulgar term salt-rheum, commonly used in America, embraces the three diseases above mentioned, will scarcely be held a sufficient argument for coining a new word, although rheum does popularly convey the idea of exudation. Piffard treats the subject under three heads:—1st, Whether such a condition as the rheumic diathesis really exists; 2d, What is its nature; and 3d, The propriety of assigning to it the three affections mentioned. That a diathetic condition does exist embracing several forms of skin eruption is pretty generally conceded; but the exact members of the group are stated with some degree of variation. Eczema and simple lichen may be classed together. Some forms of chronic eczema, psoriasis, lichen rubra or planus, perhaps some of pemphigus, again, form a pretty natural class, being all beneficially influenced by arsenic, besides other related peculiarities; but pityriasis is such a vague term, meaning now seborrhœa, now xeroderma, and anon a parasitic disease, that we think it must be thrown out of the reckoning altogether. As to the nature of the rheumic diathesis, Piffard considers it the outcome of a process of defective assimilation, of suboxidation, as some have it, combined with imperfect excretion, and looks on functional disorder of the liver as intimately connected with its production. Partially oxidized and very insoluble products are left in the circulation, to be with difficulty excreted. "This duty the kidneys will perform up to a certain point and for a certain length of time; but at last, failing to be completely removed, they seek other channels of exit, chiefly the bowels, but in par also the skin. The bowels, being accustomed to the office o depuration, do not complain when any slight extra demand is mad upon them; but the skin, less accustomed to the performance o this function, exhibits its impatience by *pruritus*, and its rebellion by *eruption*." The suggestions as to treatment are judicious, and consist mainly in correcting what is injurious in the ingesta, and in promoting the excretion of the offending products of malassimilation from the system. We are not, however, prepared to endorse Piffard's opinion as including all cases of eczema and o psoriasis under one diathetic head, or to believe in their constant relation to gout and rheumatism. While all allow that special diathetic proclivities influence disease, it is only in certain well-marked examples that their features as defined in the text-books can be positively recognised. Many specimens occupy a border-territory which embraces some of the characters of two. What Piffard has said on the subject is well worth perusal, and its truth in a good many particulars will be readily admitted.

The chief diseases of the skin are treated of in order, an alphabetical arrangement being followed, which has the advantage of rendering the information under any particular head easily accessible. The author shows a leaning to the use of remedies once common in old-fashioned gardens, and still employed by herbalists. Thus in alopecia prematura he has found advantage accrue during the early stage from the external application of infusion of sage. The treatment of the scalp, when denuded of hair by wide-spread alopecia areata, is rather startling, however. After stating that the scalp should not be kept covered up, but freely exposed to air and light, the author adds, "In summer, exposure to the direct rays of the sun is of decided service, the period of exposure, of course, depending on the ability of the patient to endure it without the induction of headache or other disagreeable symptoms." Habit is said to be second nature, and the Hindoos, by exposing their infants with uncovered heads to the direct rays of the sun, weed out the infirm, and so harden the skulls of the stronger as to render them in after years well-nigh heat-proof. Any one who has visited Aden must remember the shaven-headed Arabs who brave uninjured the broiling tropical sun; but we hardly think Dr Piffard, writing in New York, can be in earnest in advising that a head recently denuded of a thick crop of hair should be freely exposed to the direct rays of the sun in summer.

Bromidrosis is treated by the well-known methods of Hebra and Wilson, but no reference is made to the interesting researches of Dr Thin, who has, by the discovery of the *Bacterium fœtidum*, thrown much light on an obscure subject, and been able to suggest a cure by antiseptics based on scientific data.

The term chromophytosis is used in preference to the simpler, more correct, and better known tinea versicolor, and chrysophanic acid is recommended for its removal. This is unnecessary, since it can be accomplished as certainly by simpler means, and without destruction of the underclothing.

From these it is a pleasure to turn to the section on eczema, which is excellent and suggestive. We could have wished that more had been said by one who has so carefully studied the subject on the more obstinate and difficultly treated forms, especially chronic pustular eczema of the scalp in females of a lymphatic or strumous temperament, eczema of the hairy parts of the face, and dry eczema of the palms. On all these there is much to be said and much to be learned, and a fuller record of the author's experience would have been for the advantage of therapeutics.

Piffard believes lichen ruber and lichen planus to be distinct affections. This, we think, could scarcely be proved from the quotations given from Wilson and Hebra, while it is opposed to the teaching of the Vienna school, where probably there are more cases met with than anywhere else. Our own experience is in conformity with the identity, or at least very close relationship, of the two forms.

While the description and diagnosis of psoriasis are dealt with in less than a couple of pages, not one word being said as to its nature or morbid anatomy, nearly twenty-four are devoted to quotations from Wilson and Hebra, giving in full detail their modes of treatment. Such wholesale transference is surely not needed, and the space so occupied might have been employed to better purpose.

Some useful observations are made on sarcoma of the skin, a disease which, when primary, is of extreme rarity. When speaking of seborrhœa, the distinction between it and pityriasis is well put. Syphilis, too, is ably handled. The descriptions of the lesions and the rules for treatment, especially as to the employment of mercury and iodide of potassium, are judicious.

The work concludes with a selected formulary and index. It has also scattered through its pages woodcuts of numerous instruments used and useful in the treatment of skin diseases.

As a whole the book is rather disappointing. It is neither a complete treatise on skin diseases nor yet a perfect text-book of their materia medica. For reference it may sometimes be useful—more, however, to the specialist than the general practitioner. We think its author might have done better work.

A Guide to Therapeutics. By ROBERT FARQUHARSON, M.P., M.D.,
Late Lecturer on Materia Medica at St Mary's Hospital Medical
School, etc. Second Edition. London: Smith, Elder, & Co.: 1881.

THE first edition of this work was published in 1877, and we are glad to see that it has so soon reached a second edition. We had occasion to speak most favourably of the former edition, and we have great pleasure in highly commending this one to the attention of the profession. In the preface the author tells us that he has "subjected it to a thorough revision, and has endeavoured as far as possible to bring it up to a level with the most recent knowledge." Dr Farquharson has succeeded in bringing his *Guide* up to a level with our most recent knowledge.

The work is devoted wholly to therapeutics, and contains no materia medica properly so called. On this account it can never form a text-book to students without the aid of some other book treating of materia medica. It is, however, a book which all students and practitioners will peruse with great advantage. The author gives in parallel columns the physiological and therapeutical actions of the various medicines, so that the student sees at once not only the physiological action of a medicine, but also the bearing of that physiological action on the treatment of disease. This plan has much to commend it. It points out very clearly to the student the connexion between physiological and therapeutical action, a subject not sufficiently explained in many text-books. Having, in our notice of the first edition, given a full outline of the work, it is not necessary to do so again on the present occasion. It is a book which we have much pleasure in highly recommending to all our readers, feeling assured that no one will consult it without advantage.

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION

Observations on the Cæsarean Section, Craniotomy, and on other Obstetric Operations; with Cases. By THOMAS RADFORD, M.D. Second Edition. London: J. & A. Churchill: 1880.

THE second edition of this work, which was exceedingly valuable in its day, and which is composed of two parts,—1*st*, theoretical and argumentative; 2*d*, collection and digest of cases,—appears to us to have been published too late. The first part of the work is entirely out of date now, and takes no notice of the recent advances in the subjects treated of. Consequently, in regard to craniotomy, the forceps, turning, etc., the author is frequently wasting his strength in beating against the air.

Instead of working up the recent improvements in Cæsarean section, known as gastro-elytrotomy and Porro's method, into the body of his work, the author contents himself with a brief reference to these at the end of the volume.

The cases and the analyses of them are doubtless very valuable. The first part of the work is, however, in our opinion, rendered of little advantage through not being brought into relation with the present state of obstetric science and art.

Lithotrity, and Statistics of Lithotomy. By GEORGE BUCHANAN. Glasgow : James Maclehose : 1880.

THIS pamphlet appeared first in the columns of the *Lancet*, and therefore most of our readers will be familiar with its contents.

Perhaps the most interesting part of Dr Buchanan's *brochure* is that in which he records the histories of seven cases illustrating the following points :—

"1. A stone may remain in the bladder for years without causing symptoms demanding an examination of the bladder, if that has not been done on the occurrence of the first symptoms.

"2. A stone may be in the bladder for a long time, single symptoms recurring at long intervals, while during the intervening periods it may cause no annoyance at all.

"3. Symptoms of chronic cystitis may predominate to such an extent as to withdraw the attention from the necessity of examining the bladder, to ascertain if the symptoms are not caused or aggravated by the presence of a stone.

"4. An examination of the bladder on the first occurrence of the symptoms detects the stone, when it can be removed with the greatest facility and safety.

"5. Postponement of sounding allows the stone to grow to a size difficult and troublesome for lithotrity.

"6. When the bladder is fairly healthy and the urethra capacious, lithotrity is available for the removal of even large stones.

"7. When a very small stone is detected in the bladder of a child, it can be removed with ease and safety by a thin-bladed lithotrite."

The mortality in cases of lithotomy, in Dr Buchanan's hands, has been 1 death in 7½ cases for all ages, and 1 in 16½ in children under 15 years.

Notes on Tracheotomy. By DAVID FOULIS, M.D., Glasgow.

IN this pamphlet Dr Foulis recommends the employment of very much smaller tubes than are ordinarily used for children, incision of the isthmus of the thyroid (which he says is not accompanied by bleeding), and the disuse of damp air in the after-treatment of tracheotomy cases.

We think that Dr Foulis has made good points in his first and second recommendations. The tubes ordinarily sold by instrument makers are much too large for young children, and may do much harm.

Anatomically, the operation Dr Foulis recommends is a good one, seeing the incision through the isthmus of the thyroid, if strictly in the mesial line, is not likely to cause much trouble in the matter of hæmorrhage, and the locality gives more safe and ready access to the trachea than the operations either above or below the isthmus.

As regards the employment of a "chill fog," as Dr Foulis calls it, in the after-treatment, we still think that it is and has been most beneficial, and not by any means chilling in its action if properly managed.

Aphorisms in Fracture. By RICHARD O. COWLING, A.M., M.D. Louisville: John P. Morton & Co.: 1881.

THESE aphorisms are 131 in number, and contained in 37 pages of a neat little book. With all of them we cannot agree, as, for instance, where it is stated that all fractures of the forearm, without exception, should be treated by two splints extending from the elbow to the tips of the fingers. Neither can we agree with the following:—"In Colles' fracture, after union has taken place, there may remain some of its characteristic deformity," unless, of course, we admit the former statement with regard to treatment. Again we read, "Every injury, save fractured olecranon near the elbow-joint, whether it be fracture or dislocation, should be dressed with rectangular splints." The next aphorism is, "More or less stiffness of the elbow is to be expected in every fracture occurring near this joint." This we would expect as the natural outcome of the indiscriminate use of rectangular splints.

Dr Cowling considers plaster of Paris the best application in all fractures of the lower extremity, without exception, and objects to the long splint, extension, etc. With this we cannot agree; in fact, our author himself points to one of the gravest objections against the plaster, viz., that "after the apparatus has been applied a week or so the limb has shrunk so that the hand may be interposed between it and the bandage. Of what use will it be then? Or is it to be taken down and put up again every week?

We have mentioned these points from among several on which we cannot agree with Dr Cowling. At the same time, we are glad to be able to say that, on the whole, we admire his little book. It is plainly and frankly written; and although we cannot see any practical use for the book, we welcome it as the outspoken production of a practical surgeon.

A Treatise on Diphtheria. By A. JACOBI, M.D. New York: William Wood & Co.: 1881.

THIS is a valuable practical work, written in a style easy for reference.

Professor Jacobi is thoroughly exhaustive in his treatment of this subject. We shall copy only one short sentence from the summary at the end of the chapter on treatment. "Laryngeal diphtheria proves fatal in almost every case, unless tracheotomy be performed."

Notes on Rickets. By MATHIAS ROTH, M.D., London.

In this pamphlet Dr Roth goes somewhat fully into his subject, though he is not able to throw any new light on its pathology.

He attributes the disease to any debilitating disease on the part of the parents, or the absence of appropriate nourishment for the child.

In regard to treatment of the disease when manifested, he runs over the usual list of remedies, adding, however, what he calls the "movement cure" in the later stages.

The movement cure consists in gymnastic exercises adapted to the development of the muscles which have become softened or atrophied.

Refraction of the Eye. By A. S. MORTON, M.B., F.R.C.S.E. London: H. K. Lewis: 1881.

ALTHOUGH a practical knowledge of the errors of refraction met with in the eye is by no means difficult to acquire, it nevertheless calls for a certain amount of study. Most works on the subject are on too large a scale to be of use to beginners, and the chapters on refraction in our text-books are, with few exceptions, too condensed, if not altogether incomplete and superficial. The book before us seems, therefore, really to supply a want in elementary English ophthalmological literature.

The author has, within the compass of less than sixty pages, not only given very thorough rules for the objective and subjective examination of the optical condition of the eye in the various conditions of refraction which present themselves, but has entered into an explanation of the phenomena observed, which is at once scientific and extremely elementary.

A chapter on keratoscopy, very properly called retinoscopy, will be interesting to advanced students as well. The explanations given of it are undoubtedly correct.

Health Lectures for the People. Delivered in Edinburgh during the Winter of 1880–81. Edinburgh: Macniven & Wallace: 1881.

WE have been later than we intended in noticing these lectures, now published in an inviting volume of 228 pages.

The plan of the course was well devised, and has, we think been ably and successfully carried out. That ten lectures should all deserve the same commendation is not to be expected; but the arrangement, of each treating the subject on which, by natural bent of mind and special study, he was likely to discourse with peculiar weight, has secured a certain high level of excellence attainable probably in no other way.

The result of the whole course is manifestly this: that crowded audiences, in a large hall, listened week after week to a great amount of important and really interesting instruction, which can hardly fail to show itself in social and practical reformations many days hence.

We have been struck in reading these lectures—a pleasant occupation—by the great progress that has been made in *hygiène* and sanitary science during a single generation; so that facts and inferences, barely accepted thirty years ago by leading and scientific physicians, are now among the commonplaces of popular education. Think of the stimulus thus applied to the new race of medical students to take heed lest unfortunately they shall be found little, if at all, ahead of their future patients in this department of knowledge. The same *goad* is now applied to them which the ministers of religion and the teachers of theology naturally feel, when questions of biblical criticism interest and take hold of the popular mind. Nothing but good can emerge in either case, if the recognised instructors are careful to keep steadily in front of their disciples.

Zoological Atlas, for the Use of Students. By D. M'ALPINE, F.C.S. (Vertebrata.) Edinburgh and London: W. & A. K. Johnston: 1881.

THIS Atlas, we learn from the preface, is intended "to help the student in the examination and dissection of the leading types of animal life." It gives drawings of the chief points in the anatomy of the skate, cod, salamander, tortoise, pigeon, and rabbit. There are no pretensions in the book to originality of matter or style, and most of the cuts have been taken from recognised authorities. The influence of a course of biology under the auspices of Professor Huxley at South Kensington, are clearly traceable in this volume. We are of opinion that the author would have materially enhanced the value of his work had his references to the details of the objects figured been of more copious kind. As it is, the references are too sparse and disconnected for the junior student, for whom the work is chiefly intended. It would have been an improvement, also, had many of the figures been less diagrammatic, and had their coloration been less left to the æsthetics of the artist or printer. A junior student will not find his labours lightened by the expectation of finding in nature the yellow, blue, and pink displays of this Atlas. These remarks are illustrated especially by the figures of the rabbit's brain, and by the succeeding plate of the rabbit's heart and circulation. It is difficult or impossible to conceive what useful purpose can be served by Plate 19, representing a section of a frozen rabbit. A careful dissection of ordinary kind will teach the student the facts of rodent anatomy far more effectually than any number of frozen sections of the kind figured, and the more so as the illustration in question has not the merit of clearness. Apart from these defects, however, the Atlas may serve, in the hands of a careful teacher, to aid the understanding of many of the practical points seen in dissecting the common types of animal life.

On the Construction, Organization, and General Arrangement of Hospitals for the Insane; with some Remarks upon Insanity and its Treatment. By THOMAS S. KIRKBRIDE, M.D., LL.D. Physician-in-Chief and Superintendent of the Pennsylvania Hospital for the Insane. Second Edition. Philadelphia: 1880.

THIS is a handsome octavo volume of 312 pages. It is, as far as we know, the only work on the subject of at all recent date in the English tongue.

There is no question that, in building a new asylum, or in making additions to an old one, it is of great advantage to have the advice and support of one who has already thought out and tried every detail of its construction, and who, like Dr Kirkbride, gives the result of a forty years' experience. In this country, at least, it may be said that, if the superintendent of the future asylum does not strenuously exert himself in looking over the architect's plans, a vast number of mistakes will be perpetrated, which will be a source of future inconvenience and vexation. He will most likely have a building committee who manage things as ill as most committees do, and whose blunders and compromises will be fixed in solid stone and lime. We do not think the most experienced superintendent could plan a building, or revise the architect's plans and then read over this book, without deriving some useful information or being reminded of something which he had omitted. It is true that there are some differences in the climate of the United States, and in the habits and institutions of the people, as well as in the current views about the best treatment of the insane, but none of these differences are sufficiently great to prevent the advice given by Dr Kirkbride passing current in Great Britain nearly at par. What is likely to strike English readers most is the axiom that forced ventilation with large fans moved by machinery is needful for asylums, and that the insane of all classes of the community, rich and poor, should be equally entitled to State relief, and that in the same buildings. Dr Kirkbride has a low opinion of the home treatment of lunatics, and thinks that the vast majority of cases are best treated in public asylums. The provisions laid down in his book for guarding the windows and doors will probably be thought in this county to be somewhat behind the times. He naïvely remarks: "Of doors left unfastened and unguarded, every superintendent can judge for himself of the safety and propriety of such a course, and the amount of responsibility he is willing to assume." This may be taken as an indication that if lunatics have less liberty in America, superintendents have more. We know, however, that Dr Kirkbride's views on these matters are likely to be questioned in America as well as in this country, and, after all, such divergences of opinion can only lead to a very limited modification in the construction of an asylum. Dr Kirkbride holds that a well-conducted hospital for the insane should not contain more than 250 patients, and that 200 is a preferable maximum, and he thinks that there should be one attendant to every eight patients. He is not favourable to frequent social parties in which the two sexes meet on familiar terms, and is of opinion that "where a community is sufficiently populous to require two hospitals of the same general character in one vicinity, there can be little question but that many decided advantages, and no disadvantages, will result from having one of the institutions appropriated to males and the other to females exclusively." We think this is sound advice, and wonder that it is not oftener acted upon.

Dr Kirkbride's work is, of course, a book of details, and it would be wearisome either to try to find faults or to add suggestions to it. As a whole, it is worthy of praise, and of unquestionable usefulness. The book is arranged into 108 chapters, which makes it convenient for reference, and there is a good index. In the first part the purely mechanical arrangements are treated of; in the second part we have Dr Kirkbride's views on the organization of an asylum. Towards the end there are chapters on such subjects as—"Should the Recent and Chronic Insane be Separated?" "Is there Danger of the Sane being admitted as Insane?" "Restraint and Seclusion;" and "The Provision for Insane Criminals." These difficult questions are all treated in a thoughtful and sensible manner.

Dr Gheist: an Autobiography from the Midlands. Edinburgh: E. & S. Livingstone: 1881.

THERE is much both to amuse and instruct in this volume.

The name is evidently a *nom de plume*, and an attentive reader will perceive that the unities are not strictly maintained; for the author, while professing to be an old gentleman of seventy, recognises a fellow-student who had been at Edinburgh with him in 1857, and was now at the meeting of the British Medical Association in Bath in 1878. Still, the supposed autobiography has much verisimilitude in it, and affords many opportunities of ventilating questions of great interest both to medical practitioners and to their patients. The latter may read the book with profit, because Dr Gheist articulates in a very graphic manner many topics touching the relations of unprofessional people with their medical advisers, which are often misunderstood, and which, at the same time, concern the comfort and good feeling of both parties. The tone of the book tends decidedly to maintain the character of our profession, and to discourage everything that is selfish and ungentlemanly.

The subject of Lady Doctors is amusingly treated, and the weak points of the system cleverly exposed by reference to his own experience—although it is new to us to hear of the fair sex commencing practice in rural districts. Two ladies are brought on the stage, of very different natural characteristics. One of them is very attractive in looks and manner, and immediately casts a glamour over Dr Gheist's young Irish assistant, who had previously been much opposed to female intrusion into the ranks of the profession. They marry in a few weeks; the lady abandons all her enthusiasm for practice, and becomes a pattern house-mother. The other Lady Doctor, after assisting Dr Gheist for some time among his female patients, became the wife of an old country lawyer who took a fancy for her. But having no amatory feelings herself for the opposite sex, and presenting no personal attractions, but the opposite, for one of her own age, she stuck to her profession, and made her poor old husband miserable by domineering oppression. It is fair to add that she had frankly told him that she had *a mission*, and only took him as a convenience in carrying it out.

Dr Gheist has thoughts of his own on professional subjects, and gives some cases illustrative both of psychology and cerebral physiology which are suggestive of acute observation and inquiry.

He has also an eye for the picturesque, can depict individuals with much graphic power, and makes his reader long for the green fields and quiet rural lanes of the Midland Counties.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING VIII.

Wednesday, 1st June 1881.—Dr P. H. Watson, *President, in the Chair.*

I. *The President* showed the following specimens:—1. Specimen of RECURRENT SARCOMA removed from the popliteal space, requiring the removal of part of the semitendinosus, semimembranosus, and ligamentum posticum of the knee-joint. To effect this, the division of the internal articular vessels and the displacement of the popliteal vessels and nerves outwards and backwards was required. The tumour had been thrice previously removed. 2. Specimen of RECURRENT SARCOMA from the groin, with a portion of the ilium. It had twice before been removed. On the present occasion the ilium as far down as the border of the acetabulum, with the anterior inferior crest of the bone, were cut away with bone forceps. 3. ONE-HALF OF THE TONGUE removed by means of the thermo-cautery after preliminary section of the lips and inferior maxilla. In this case, though all copious bleeding likely to afford occasion to insufflation of blood was prevented during the operation, a spurious pneumonia of the right base supervened, and the patient succumbed. 4. A LARGE HERNIAL SAC removed from a case of irrestrainable oblique inguinal hernia, where the entire sac was dissected out, or rather stripped away from its coverings, the contents reduced, the sac twisted into a cord by means of volsella forceps, and a strong catgut ligature applied close to the internal abdominal ring, after which the sac was cut away, the external inguinal opening stitched up, and the cutaneous incision closed by suture. 5. A case of PHOSPHATIC CALCULUS, weighing an ounce and a half, measuring 8 by 5 centimetres in its two greatest diameters, spontaneously evolved from the bladder of a young girl æt. 16. 6. Specimen of so-called TUBERCULAR TESTIS extirpated. The disease was really one of tubular inflammation with suppuration and partial caseation. Dr Watson directed attention to the tendency in these cases to involve the prostate, and to give rise to caseous diffusion affecting the peritoneum and lungs, and expressed an opinion that not a few cases of general tuberculosis in young men might reasonably be referred to caseation of a suppurative epididymitis consequent on urethritis. He also indicated his approval of a large removal of scrotal tissues in extirpation of the testicle, as securing less immediate bleeding, because fewer vessels to tie, and rapid cicatrization, while the risk of after bleeding, so troublesome a consequence in the old mode of operating, was escaped from. 7. Specimens of FIMBRIATED SYNOVIAL MEMBRANE removed from the knee-joint. In this case the patient, a gamekeeper, was rendered almost incapable of locomotion from extensive fimbriated disease of the left knee. Dr Watson laid open the joint by a free incision on the outer and inner side of the patella, and by curved scissors cut away all the fimbriated membrane. The Esmarch's band was employed to restrain bleeding during the operation; the incisions were closed by sutures, except where two full-sized drainage-tubes protruded; the dressing consisted of dry boracic lint and salicylic cotton. The incision healed without discharge, and the joint has been restored to its integrity. Dr Watson believed that this method of treatment was new, so far as he was aware.

II. *Dr Brakenridge* then read his paper ON THE ACTIONS AND USES OF CITRATE OF CAFFEIN AS A DIURETIC, the first part of which appears at page 4 of this Journal.

Professor Fraser said the Society was greatly indebted to Dr Brakenridge for his interesting and elaborate communication. The subject was one of great practical value, and Dr Brakenridge had treated it in a manner that was very suggestive, and also with a full appreciation of its difficulties. A great part of the paper was occupied with an endeavour to determine the special conditions that interfered with the function of the kidneys, and the diuretics that should be employed in those special conditions. He was not sure that Dr Brakenridge was entitled to assume that the diuretic effects of digitalis depended solely upon its well-marked action upon the circulation. This extreme view was not justified by observation or experiment, and Dr Brakenridge was no doubt aware that there is evidence, perhaps not amounting to demonstration, in favour of the diuretic effects of digitalis being partly caused by a direct action upon the secreting structure of the kidneys. He had listened with much interest to the evidence in support of the diuretic action of caffein. Gubler's statements had some years ago brought this action prominently into notice, and had led him, as well as many others, to administer caffein as a diuretic. The results, so far as his observations went, were not satisfactory. Dr Brakenridge had brought forward a case, the only one, he thought, in his paper, in which caffein appeared to have caused a great increase in the quantity of urine. In this case, however, digitalis also was given, and the case did not appear to prove that the marked increase that occurred in the quantity of urine could certainly be attributed to the caffein. No doubt, for nearly three days digitalis was administered without causing any increase in the quantity of urine, and then an increase occurred within a few hours after caffein was also given. This increase, however, might have occurred had caffein not been given. It was a matter of common observation to find that diuresis was not produced during the first two or three days of digitalis treatment, and that on the third or fourth day a great and sudden diuresis took place. This being frequently observed when no caffein is given, the case which Dr Brakenridge seemed mainly to rely upon as affording evidence of the diuretic action of caffein appeared to be of very doubtful value. At the same time, Dr Brakenridge had done good service in discussing the special indications for the use of different diuretics. His paper contained valuable suggestions regarding the class of cases in which caffein may be used as a diuretic, and by availing one's self of those suggestions it may be found that in certain stages of renal disease caffein is, after all, a useful diuretic.

Dr Brakenridge, in reply, said that the diuretic action of digitalis could be fully accounted for by its action on the circulation, and therefore he, along with many others, saw no reason to assume that the drug possessed another totally distinct action which had not been demonstrated. There was, he thought, reason to believe that where digitalis has caused increased diuresis, without a corresponding increase in the arterial tension, the force of the heart may have been increased without contraction of the arterioles, and with the result that the circulation has been quickened, rather than the blood-pressure in the arteries raised. Hence the increased diuresis in such cases is probably due to the increased amount of blood which passes through the kidney. Dr Brakenridge was quite familiar with the fact that often no very marked increase in the amount of the urine occurs until the third or fourth day after the commencement of the digitalis treatment. Why? Because, as he had explained in his paper, during the first few days digitalis chiefly effects a transference of work from the secretory to the filtering structure in the kidney, which is not necessarily represented by any increase in the amount of the urine. That in the last case given in the paper—which was selected from a number of similar cases—the rise in the amount of the urine in a few days from 15 oz. to 139 oz. was not due to the action of digitalis as a vascular diuretic, was clear from the fact that it was accompanied by a feeble and irregular pulse and low blood-pressure. As those who support the view that digitalis has a distinct action as a stimulant of the secreting structures of the kidney, admit that this is its lesser and feebler action, Dr Brakenridge thought it would hardly be claimed that the greatly increased diuresis in this case was due to this action of digitalis. Taken along with all the evidences brought forward in the paper, it was much more likely that the diuresis in this case was due to the combined and complementary action of the two drugs, as explained in the paper, viz., an increase in the amount of blood circulated through the kidneys, caused by the digitalis, and an increase in the activity of the secretory structures, caused by the citrate of caffein.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING VII.

Wednesday, 9th March 1881.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Halliday Croom* showed the UTERUS AND ANNEXA of a patient who had died suddenly two hours after labour. There were one or two points to which he wished to draw attention. The ovarian vein on one side was very much distended, and on vertical mesial section the close coaptation of the uterine walls, and, what would be interesting to Dr Hart, the much greater thickness of the anterior uterine wall as compared with the posterior, could be noted. The bladder was small, and the posterior vaginal wall exceedingly thin at its upper part. This was a fact interesting in connexion with the application of the forceps.

II. *Dr Macdonald* exhibited—(1) an EPITHELIOMATOUS TUMOUR which he had lately removed from the urethra and vulva of a patient in the Royal Infirmary. The patient was 40 years of age, and only lately married. The epithelioma involved the outer extremity of the urethra, and part of both labia minora as well as of the clitoris ; but on careful examination it was made out that the disease had not reached the pubic bones. The symptoms complained of were pain and complete retention of urine, the patient being relieved only by catheter. The indications for relief were so urgent that, in spite of the possibility of landing the patient in incontinence, it was resolved to remove the tumour. Four needles were made to transfix its mass from before backwards, and the whole of its bulk was surrounded and removed by the galvano-caustic wire. About half an inch of the lower end of the urethra was removed. There was no bleeding. The urethra was sought for, and found with difficulty, and a winged catheter was passed into the bladder, and the urine drawn off, as it formed, with a long guttapercha tube. The catheter caused no irritation, though it was left for about two months in the bladder. The patient completely recovered, and was able to retain and pass her water herself before she left the hospital. (2.) A TWIN PLACENTA with a COMMON AMNION. Hyrtyls' law held good, viz., the children were both of the same sex ; but as one had died, he was unable to say whether they would have been similar in other points.

III. *Professor Simpson* then communicated, for Dr Sang, Broughty Ferry, a CASE OF LABOUR OBSTRUCTED BY A FIBROID TUMOUR, which appears at page 38 of this Journal.

Dr Halliday Croom thought the case that had been brought under the notice of their Society one of the best told he had ever listened to. There were some interesting points in it to which he wished to allude. Thus it was unusual to meet with a tumour of such size in a woman who had so many previous pregnancies, and who had had no previous complication, hæmorrhages, nor abortions. The treatment was good, and the selection of forceps fit and proper. In such cases one should remove the tumour if possible, and if not, attack the fœtus. He thought it very remarkable that there were no complications in the third stage, such as hæmorrhage, nor any interference with involution during the puerperium. It was certainly unusual for such a large tumour to have occasioned no complications either during pregnancy or the lying-in.

Dr Simpson thought the profession and the Society indebted to Dr Sang for an important contribution to what the Germans termed "Casuistik." The first question to consider was that of diagnosis. Was this really a fibroid tumour ? Now, although the history and tenderness were against its being of a fibromatous nature, he had yet no doubt but that it was so. The tenderness may have been due to pressure, and its exact position, viz., in the upper part of the cervix, rendered it no barrier to conception, and prevented any complication in the third stage. In enumerating the conditions leading him to decide on early interference, Dr Sang had kept the maternal condition in view; but the child had also a better chance of survival. He agreed with Dr Croom that the use of the forceps was right. The record of the mechanism, and the history of the involution of the uterus, were very valuable, and would enrich our Transactions.

Dr Hart thought the case interesting, but did not believe the mechanism of delivery was that of a flat pelvis. It had the movements one found at a justo-minor brim.

Dr Carmichael agreed with Dr Sang that forceps was the proper treatment, but demurred to his opinion that the child would have been dead if turned.

The President had little to add to what had been said. He was greatly pleased with the paper and the discussion on it. No doubt some points were obscure, but he agreed with Drs Croom and Simpson as to the nature of the tumour. It could not have been sarcomatous, was not inflammatory, and could really be nothing else but a fibroid. The difficulty of its causing no trouble in previous labours could be got over by supposing it was of recent growth. As to the question of turning and forceps, that was to be settled by the gentleman in charge of the case. Of course, if Dr Sang could have turned and brought down the occiput to the left, he might have had an easier delivery. The only question with him was, whether in such cases one was justified in using so much traction with the forceps. It was probably better for the mother to do craniotomy than to risk her life only to bring a still-born child into the world. His personal experience of such cases was not great. He might mention an interesting subperitoneal one. It was pediculated, and, getting impacted between the abdominal wall and pregnant uterus, set up general peritonitis. By the use of morphia, however, it ceased to give trouble, although at one time it was thought possible that it might require removal by gastrotomy.

Dr James Young remembered a case of a patient in labour where there was a fibroid on the posterior wall of the uterus. Sir James Simpson also saw the case. Forceps were applied, and the woman and child recovered.

Dr Sang thanked the Fellows for the reception accorded to his paper. It was only after the involution of the uterus had been watched, at Dr Simpson's suggestion, that this view was adopted of its being a "fibroid."

IV. *Dr Simpson* then read his QUARTERLY REPORT OF THE ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL, which appeared at page 1057, vol. xxvi., of this Journal.

Dr Craig regretted deeply the large mortality that had hitherto been experienced in connexion with their Maternity Hospital. In the first of the fatal cases the placenta was adherent, and it was three-quarters of an hour before it was extracted manually by one of the residents. He thought it was dangerous to wait so long, as the os became contracted, and required to be dilated by the hand. When the placenta was adherent, it should be promptly extracted whenever the true state of the placenta was ascertained.

Dr Croom sympathized with Dr Simpson in presenting his report. He held himself responsible for the fatal cases, however, as he left Dr Simpson a case of suppurative septic peritonitis. He thought the Maternity physicians should have fair play. Hitherto he had always entered on his duties with a legacy of a septic case, a state of matters arising from the fact that they had no means of isolating or removing such cases from the Hospital.

Dr James Carmichael thought this was a very serious matter. They should certainly have a reserve ward, detached as much as possible from the ordinary wards, to which septic cases could be removed.

The President remarked on the interest of the report. As regarded the management of the placenta, he did not see that the residents were in any way blameworthy. It would certainly have been gratifying if Dr Simpson had presented a clean bill of mortality. Dr Simpson had been kinder to him than Dr Croom, however, inasmuch as he had left no septic case in hospital when he (Dr Macdonald) came on duty. So far as he had gone, there had been no maternal deaths, although there had been one serious operation at least. He thought Dr Croom right in his remarks. The Maternity physicians should have a ward near the hospital to which suspicious cases could be at once removed. He had been specially interested in the case of gonorrhœal colpitis of which Dr Simpson had given so lucid an account. Several years ago he (Dr Macdonald) brought this matter before the Society when he gave an account of some cases he had met with in practice. In one there was rapid death two days after abortion at the sixth month. On post-mortem he found the putrescentia uteri, both ovaries reduced to purulent pulp, and much pelvic peritonitis. He had no doubt that gonorrhœa in the puerperal state was very fatal. In another case the mother very nearly died from perimetritis; the child had gonorrhœal ophthalmia, lost one eye entirely, and made a narrow escape as regards the sight of the other. There was no doubt that the Maternity had greatly improved since the adoption of rigid antiseptic precautions, for which they were much indebted to Dr Croom.

Dr James Young and *Dr Gordon* agreed with Dr Craig in his remarks on the case of retained placenta.

Dr Hart thought the residents perfectly right in their treatment of the case of retained placenta. The rules given by Dr Craig were both dangerous and fussy.

Dr Simpson thanked the Society for the reception accorded to his report. Dr Craig misunderstood him if he thought the woman was left forty-five minutes without treatment, as the residents had first carefully tried expression. He believed they were quite justified in waiting as they did. It is not a matter of indifference to pass the hand into the uterus and remove an adherent placenta especially in a Maternity such as theirs. In Germany the pendulum had already begun to swing back in regard to rapid expulsion o the placenta. Thus one of the most intelligent of German obstetricians, Professor Freund of Strassburg, had told him that he had no hesitation in leaving a patient in whom the placenta had not come away in the hands of an intelligent midwife. If the placenta did not come away next day, it would come away some time after. This was extreme, but it showed the opinion of some. In his case the delay of forty-five minutes did not add one whit to the patient's danger, as there was no hæmorrhage going on. Dr Croom had been kind enough to throw his ægis over him in regard to the fatal cases. They should remember, however, that of these the case of the second woman was beyond one's control; and the third case had been, by mistake, for a short time in the room along with her. The isolation ward was a good idea, but the difficulty was want of funds.

SESSION XL.—MEETING VIII.

Wednesday, 23d March 1881.—Professor SIMPSON, *Vice-President, in the Chair.*

I. *Dr C. E. Underhill* showed a FŒTUS with a large ventral hernia, spina bifida, imperforate anus, and feet turned backwards. The sex could not be determined by external examination. The case was under the charge of a midwife, who, finding she could not make out the nature of the presentation, sent for a medical man. On examination he found the hernia of the fœtus presenting. It was ultimately born without interference. He hoped to lay a more full account of the case, and another analogous one, before the Society at an early period.

II. *Dr C. E. Underhill* read the following Historical Note on a CASE OF ABDOMINAL SECTION IN THE SIXTEENTH CENTURY:—The triumphs achieved by abdominal surgery of late years lend a special interest to cases in which operations involving the opening of the abdomen were performed by the older surgeons. The case I am going to relate appears to be one of the first in which a surgeon ventured to make an incision into the abdomen for the purpose of removing the remains of an extra-uterine gestation; and it is the more striking as the operation was performed during the existence of a second and natural pregnancy, and the patient recovered without any interruption of the pregnancy, which terminated naturally in due course. I came across it in the voluminous collection of curious cases collected by John Schenck of Grafenberg, which was published in Latin at Frankfort in 1609, under the title, *Observationum Medicarum, Rararum, Novarum, Admirabilium, et Montrosarum Volumen.* The work is divided into seven books, and contains upwards of a thousand folio pages. The cases are col-

lected from the writings of a large number of authors, of whose works a long list is given at the beginning of the volume. The case in question is quoted from the history of remarkable cases of Marcellus Donatus, and is to be found in Book IV., page 660, of Schenck's work. It was as follows:—In the month of March of the year 1540, at Castrum Pomponii, commonly called Pomponischi, in the province of the Lords of Gonzaga, not far from the river Po, there lived a woman whose name was Lodovica; but, in consequence of her great size, she was commonly called La. Cavalla. Now this woman had at one time been pregnant; the fœtus had died in utero, and the soft parts had become putrid and been discharged through the vulva, while the bony parts had been retained within her. When she had recovered her health she again became pregnant. Her health soon became seriously impaired, and she passed into a condition of the greatest danger. At this time there chanced to come to these parts a certain surgeon whose name was Christopher Bain, one of those who journey about, passing from town to town. As soon as he had heard of this woman's condition, which was fully explained to him by some of the neighbours, he offered to try and restore her to health, on condition that they should put her unreservedly into his hands, including her body if she died (*ac mortuam*), and should agree to pay him ten golden pieces if she recovered. Her relatives, who were poor persons, accepted his offer, some of the wealthier people in the neighbourhood helping them and promising to pay the money. The man, who was ignorant of letters, but a bold fellow, had the woman tied up, and set about the operation. Having slowly dissected through the longitudinal muscles of the abdomen and the peritoneum, he at last opened the uterus itself and extracted the skeleton of a male child. He washed out the uterus with warm wine mixed with certain aromatics, and united the lips of the wound by a suture, having burned with the actual cautery the part that was sewn in (*candentique ferro partem inconsutam inurit*). Wonderful to relate, the woman recovered, and in due time bore the other child, not only alive, but absolutely uninjured in any way. She subsequently conceived, not only once, but four times, carried her children to the full time, and was safely delivered. The case I have given is a remarkable one, but I am able to bring witnesses to its reality, namely, Dominus John Baptist Zorzonus and Alexander Begher, Dominus Frederick de Felini, and Dominus Leonellus Zorzonus, and Antonius Maiochus or Mazzuchinus, and several others, who were present at the whole operation.—*Marcell. Donat. Hist. Med. Mirab.*, lib. 4, c. 22.

Remarks.—The first question that rises about this case is whether it is true. I think we may assume it to be so from the very circumstantial manner in which it is related, as well as from the number of persons who are mentioned as having been present when the operation was performed. It is, moreover, unlikely that any one would invent an operation so bold and unusual at that period, and would relate it in such detail. If the case be not true we can at all events remark that the inventor of it had a very clear and bold conception of the duties and possibilities of abdominal surgery. The case itself is obviously one of extra-uterine gestation in which the sac had opened originally into the vagina, and the soft parts having been discharged in a fluid state, the opening had possibly become obliterated. The operator made a very natural mistake in supposing that the sac which he opened into, and from which he extracted the bones, was the uterus, as gestation outside of the uterine cavity does not seem to have been known to surgeons or writers at that period. Parry[1] states that the existence of *tubal* pregnancy was first recognised by Riolanus the younger, who described it in his *Anthropographia*, published in 1649, and this seems to have been the first instance in which anatomical proof was given of gestation taking place anywhere but in the uterine cavity.

Schenck has collected several other cases in which the dead fœtus was extracted through the abdominal wall during the sixteenth century, but in all of them an abscess had formed and discharged, and one or more sinuses existed near the umbilicus. These sinuses were then enlarged and the fœtus extracted. But these are not true cases of gastrotomy properly so called, as Parry points out.[2] "If the cyst has contracted adhesions to the anterior abdominal wall, and has opened by one or more orifices upon its surface, the matter is a very simple one. Nature has indicated the way in which she desires to get rid of her encumbrance, and enlarging the orifice is an operation of little gravity." But in Bain's case there is no mention of any such adhesions or sinuses, and the description of the operation seems to negative such a supposition; and it appears to be the first case in which true gastrotomy was undertaken for this purpose. It is not mentioned by either Campbell or Parry, the latter of whom says:[3]—"The earliest case which we have been able to find upon record is that of Primerose who operated in 1594. The history of this patient has become classical. She was twice pregnant with extra-uterine children, first in 1591, and again some time before 1594. The cyst of the first child opened spontaneously through the abdominal wall. The fistula was enlarged, and this child extracted by Jacob Nocerus, a surgeon. This operation proving successful, Primerose removed the second infant by gastrotomy two months later. It is easy to imagine how he was led to perform the second and more hazardous operation." This patient also recovered. Another successful case was reported by Platerus three years later, and after this there is no indication that the operation was performed for more than a century.

Although Bain's case is the first I can find recorded in which the operation was definitely undertaken for the purpose of removing a dead fœtus, it seems most likely that the classical case of Jacob Nufer, which is commonly referred to as the first recorded instance of Cæsarean section on the living woman, and in which a living child was removed in this way, was in reality a case of extra-uterine gestation. It is to be found in the collection of Caspar Bauhin; and it is so graphic and interesting that I venture to reproduce it here. It is thus related in E. von Siebold's[1] great *History of Obstetrics*, from which I have translated it:—

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[1] *Extrauterine Pregnancy*, by John S. Parry, London, 1876, p. 35.

[2] *Loc. cit.*, p. 223.

[3] *Loc. cit.*, p. 223.

"According to the relation of Caspar Bauhin, in his Appendix to the Latin translation of Fr. Rousset's writings upon Cæsarean section, Jacob Nufer, a swine-spayer at Sigerhausen, in Switzerland, in the year 1500 delivered his own wife by opening the abdomen, and the operation proved successful for both mother and child. The woman was pregnant for the first time, and when the time for her delivery arrived, and she had already suffered the most terrible pains for several days, there had gradually assembled at her bedside thirteen midwives and several lithotomists. But all of them together were neither able to relieve the poor woman of her child, or to mitigate her sufferings. Thereupon the husband of this woman proposed to resort to the last means of saving her, and assured her that if she would take his advice, he hoped, by the blessing of God, to bring the case to a successful issue. She gave her full consent, and Nufer insisted further upon having the permission of the magistrate to his attempt. This, after some reluctance, was eventually obtained. Nufer next asked those of the midwives who had sufficient nerve for it to assist him at the delivery of his wife, while the more timid ones were requested to leave the room. Eleven of the midwives chose the latter course, while two of them, with all the lithotomists, boldly remained with the woman. The husband first besought the help of the Almighty, then closed the door, laid his wife upon a table, and made an incision in her abdomen, in the same way as he was accustomed to do to the swine (*non secus ac porco*). He opened the abdomen so cleverly at the first incision that the child was extracted without any injury. When the eleven midwives outside the door heard the baby cry, they wanted to come in, but they were not allowed to do so until the child had been washed, and the wound sewed up in veterinary fashion. The wound healed without any further mischance.[2] For after this abdominal section the woman bore twins, and was subsequently confined on four different occasions. The child which was delivered by this operation lived to reach the age of 77 years."

In commenting on this case, Von Siebold remarks, after expressing a doubt as to its veracity, that it was probably one of extra-uterine gestation, as no mention is made of an incision into the uterus, and points out that the difficulty in the first labour could not have been due to a very narrow pelvis, as the woman was subsequently delivered several times safely and without artificial help.

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[1] *Versuch einer Geschichte der Geburtshülfe*, von E. C. J. von Siebold, Berlin, 845, Band ii. S. 95.

[2] *No* mention whatever is made of the placenta, either in this case or in *that of Bain*.

But, to return to Bain's case, it has this special point of interest, that it was performed upon a woman during the existence of a second pregnancy, and without causing a miscarriage. How far this second pregnancy was advanced we are not told. I have not been able to find any other case in which the operation was performed under these circumstances.

There are two cases on record, however, very like it, both of which were twin pregnancies, one of the twins being inside, the other outside the uterus. In the first of these Dr Deocene[1] removed the extra-uterine fœtus at the end of the ninth month, and when doing so discovered the existence of the intra-uterine pregnancy. This second child he also removed at the same time by incising the uterus. The mother recovered, but both children were lost. The second case was that of Dr Salle[2] of New Orleans, which occurred in 1860, and in which there was no suspicion of an intra-uterine pregnancy until the pregnant uterus came into view after the removal of the extra-uterine child: it was then incised, and a living child removed. Both children lived, but the mother died in three days, probably of septicæmia.

We are now quite familiar with the fact that pregnancy is no bar to the operation of ovariotomy during its course, and that the women generally recover, while the pregnancy is frequently undisturbed, especially if the operation be performed during the first three or four months. Schroeder has operated seven times for ovarian tumour during the coexistence of pregnancy. All the women recovered, and only three of them miscarried—in one case, seven weeks after the operation. Olshausen collected fourteen cases in which ovariotomy was performed during pregnancy. Four only of these women aborted, and two died. Spencer Wells,[3] in operating under the same circumstances, had, up to 1877, performed nine such operations, all having recovered but one.

Cases of a similar kind have been reported by Thornton, Lawson, Tait, and other ovariotomists. A still more remarkable instance of tolerance of operative interference occurred to Schroeder,[4] who removed by abdominal section, from the uterus of a woman who was sixteen weeks pregnant, three fibrous tumours, of which one was as large as an adult head. The patient recovered, went on to the full time, and was safely delivered of a living child. Mr Knowsley Thornton has also removed by abdominal section a fibroid from the uterus of a woman who was seven months pregnant. She miscarried within twenty-four hours, and died a few days later from bowel obstruction.[1] The only other points in Bain's case to be noticed are that he used a modified antiseptic application in the form of "warm wine mixed with certain aromatics" for washing out the sac, and that he employed the actual cautery, apparently to the edges of the sac, but the Latin does not make it clear whether it was to it or to part of the edge of the external wound that this application was made.

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[1] *Gaz. des Hôpitaux*, 1852, p. 175.

[2] *New Orleans Med. Journal*, October 1860, p. 727. Both these cases are quoted by Parry.

[3] *Obstet. Transactions*, vol. xix. p. 286.

[4] "Die Laparotomie in der Schwangerschaft," *Zeitschrift für Geburtshülfe und Gynäkologie*, Band v. Heft 2, Seite 383.

It was agreed to discuss the paper along with the next one, by—

III. *Professor Simpson*, on a CASE OF CÆSAREAN HYSTERO-OÖPHORECTOMY, OR PORRO'S OPERATION.[2]

Dr C. E. Underhill remarked on the interest and value of Dr Simpson's account of this rare operation. He believed there had been no case of Cæsarean section on the living woman in Edinburgh within the memory of any of our present practitioners. He sympathized with Dr Simpson in the want of success in the case, so far as the mother was concerned. Porro's method of performing the operation seemed likely to supersede the old plans, at least in Europe. The only point in it yet to settle was as to the treatment of the pedicle. All the cases where the pedicle had been treated intra-peritoneally had proved fatal. This point deserved careful consideration. Müller's modification had been used with advantage where the woman had been a very long time in labour. By it there was less loss of blood, and no escape of the uterine contents into the abdominal cavity. He felt indebted, along with the other fellows, to Dr Simpson for his graphic account of the case.

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Dr Gordon believed that in cases of Cæsarean section the patient had a better chance if the uterus was left.

IV. *Dr Milne Chapman* then read his NOTE ON A METHOD OF TREATMENT FOR CERTAIN CASES OF INCONTINENCE OF URINE, which appeared at page 1095, vol. xxvi., of this Journal.

Dr C. E. Underhill congratulated Dr Chapman on the very successful issue in this case. They all knew how difficult cases of cystitis were to treat, and accordingly were gratified when a new and successful method for the cure of a distressing malady was brought before them.

Dr Hart had listened with great pleasure to Dr Chapman's able paper. It was difficult to explain how hyperdistention benefited the case. The method was possibly analogous to the hyperdistention by carbolized water of abscess cavities practised by the late Mr Callander of St Bartholomew's. Mr Ogston of Aberdeen believed that this acted by bringing an antiseptic thoroughly in contact with the abscess wall, and thus more actively counteracting putrefaction.

Dr Milne Chapman thanked the Fellows for their reception of his paper. Probably the explanation given by Dr Hart might hold good in cases where cystitis was still present along with diminished

[1] *Obst. Trans.*, vol. xxi. p. 163.

[2] An abstract of this is given on p. 86.

bladder capacity. The case reported, however, was one where the causal cystitis was cured before the distention treatment was commenced, and the object of this latter was to cure the resulting incompetence.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

Clinical Lecture on a Case of Cæsarean Hystero-oöphorectomy, or Porro's Operation, with Remarks, by Prof. A. R. Simpson (*Brit. Med. Journal*, June 11 and 18, 1881).—The patient was the subject of rickets, and had a pelvis with an internal conjugate of 2¼ inches, who, at her four previous confinements, had been delivered by destruction of the child. The operation was performed antiseptically in the last week of pregnancy according to calculation, and before any dilatation of the os uteri had commenced. The incision was 5½ inches long, ending 1$\frac{3}{16}$ inches above the symphysis pubis. The uterus was incised immediately on the peritoneum being opened, and the child, which was strong and living, extracted by the head. The uterus was projected through the abdominal wound, and a piece of stout whipcord tied firmly round the broad ligaments and cervix. Permanent ligatures were then passed, one controlling the ovarian arteries and venous plexuses on each side, a third embracing the isthmus uteri and uterine arteries. The uterus was then amputated, the whipcord cut and removed, the ovaries cut away, and the whole stump seared with the Paquelin cautery. On sponging out the abdomen the ligature was slightly displaced, and some oozing occasioned, to check which the central portion of the stump was again secured in two parts, and the cautery again applied. The ligatures used were of strong carbolized silk. The abdominal wound was then closed. The temperature rose the same evening to 100°·8, and she died on the third day. On post-mortem examination there was evidence of commencing peritonitis. The writer then gives and analyzes a table of 72 operations performed up to 1st April 1881, and enters into a historical account of the various modifications that have been proposed of the Cæsarean section. He considers at length the technic of the operation, and in regard to the management of the stump states—"The favourable results obtained from this intraperitoneal method of treating the stump of ovarian tumours—results much more satisfactory than those obtained by the use of the clamp—lead one to believe that, in Cæsarean hystero-oöphorectomy, it will betimes also give better success; but as yet the results have been disappointing."

SUCCESSFUL CASE OF PORRO'S OPERATION, by A. Breisky, Prague (*Centralblatt f. Gynäk.*, p. 228).—The operation was performed on a 28 year old woman, who had been in labour over two days. The pelvis was an "asymetrical, generally contracted, flat, and rachitic," of the third degree of deformity, and with the conjugata vera measuring 2·7–2·9 inches. The child presented by the vertex in the first position. The patient was in good condition, and had no tenderness over the hypogastrium. Operation under thymol spray. Incision from a hand's breadth above the umbilicus. The unopened uterus was pulled forward through the wound, and two strong wire ligatures passed round the supra-vaginal portion. These could not be ligatured at first on account of the head bulging into the cervix. The uterus was opened and the child with some difficulty removed. It was asphyxiated, but was soon brought round. The ligatures were, immediately on the birth of the child, drawn tight by means of a Cintrab's apparatus, and the uterus, with the placenta *in situ*, and ovaries cut off. No sponging of the peritoneum was necessary, as nothing had escaped into it. The stump was fixed by a long needle to the lower angle of the wound. The wound was closed with deep silver and superficial silk sutures. No drainage-tube was used. On the thirteenth day the needle was removed, on the fifteenth and sixteenth the ligatures, and on the twentieth the sloughing portion of the stump separated. The stump wound healed without leaving a fistula by the sixth week. The author states that the procedure he followed—Müller's modification of Porro's operation—is easily carried out, and is safer than any of the other methods, and that the intraperitoneal method, by whichever way the stump is treated, is so unsafe as to be inadmissible.

THE THIRD STAGE OF LABOUR: AN ETHNOLOGICAL STUDY, by Geo. J. Engelman, M.D. (*Amer. Journ. of Obst.*, April 1881).—This paper is grounded upon facts obtained through the agency of the American Bureau of Ethnology, and deals with the methods of managing the third stage of labour in use among the native tribes of America. In one way or another the *vis a tergo* is employed, and in only a few tribes is traction on the cord the ordinary treatment. The methods vary widely. Some approach very nearly Credé's, others beat or knead, or get a second party to stand upon the patient's abdomen, while a few trust to intra-abdominal pressure as obtained by the use of emetics or ptarmics. The Sioux use a squaw belt, which the patient herself applies while standing, and tightens till the placenta comes away. Some of the means used in retarded cases are curious, as the administration of a quart of dry beans, which are intended to act by swelling, and vigorous choking, as among the Mexicans. Traction on the cord is also used to overcome retention, but cases of manual extraction are not recorded.

DELAYED MENSTRUATION AND PELVIC CONTRACTION, by W.

H. Morse, M.D. (*New York Med. Journ.*, April 1881).—The writer refers to his former paper in the *Amer. Journ. of Obstetrics*, 1878, already reported in this Journal, and states that delay in the onset of the menses ("menischesis") is attended by imperfect development of the pelvis, and considers in this paper the prophylaxis and treatment of that condition. To do any good, treatment must be begun before the sixteenth year, and he insists on the necessity of striving by all known means—which he discusses at length—to overcome menischesis, and thereby, as he confidently asserts, obviate the otherwise inevitable pelvic contraction.

CASE OF SPONTANEOUS COMPLETE RUPTURE OF THE UTERUS, WITH RECOVERY BY DRAINAGE, by C. von Hecker, Munich (*Centralblatt f. Gynäk.*, No. 10, 1881).—The writer adds this case to those of Frommel's, already reported in the *Journal*, as an indication of what he considers should be the proper treatment. The rupture was complete when the case was first seen. Delivery was effected by the forceps, and the placenta extracted from the abdominal cavity, where it had escaped, by passing the hand through the rent in the uterus. A large drainage tube was inserted into the peritoneal cavity, and retained there apparently for fourteen days. No mention is made of washing out. Recovery was complete at the end of three weeks. A curious feature of the case was that the child was, when born, quite stiff, so that, when held out by the feet, it hardly bent. The writer describes it as rigor mortis.

IS THE PRESENCE OF "DECIDUAL CELLS" CHARACTERISTIC OF IMPREGNATION? by Dr Carl Ruge (*Centbl. f. Gynäk.*, 1881, No. 12).—The writer quotes from Wyder that the mucous membrane of the uterus during menstruation, and also that which is thrown off in cases of membranous dysmenorrhœa, can be distinguished with certainty from the decidua vera, that is to say, from the mucous membrane of the gravid uterus. The points relied upon by Wyder are, the size of the cells, those of the decidua being at least ten times larger than the others, the round shape, and the fact that the nucleus nearly fills the whole cell in the unimpregnated condition, while the cells of the decidua contain a relatively large amount of protoplasmic contents. Ruge then admits that these differences exist in the majority of cases, but asserts that occasionally, where impregnation has not occurred, cells may be found which in *all* their characteristics exactly resemble the so-called decidual cells. He states that he has found such cells in one case of chronic endometritis, in another of endometritis connected with the presence of a fibroid tumour, and in a case of membranous dysmenorrhœa. This latter case he relates at length, and from the persistence of the cells in every cast from the uterus, notwithstanding treatment, and also from the length of time she was under treatment in hospital, the question of impregnation was inadmissible. He points out the importance of his observations in its medico-legal aspect.

OÖPHORECTOMY, NO. II., BEING A SERIES OF TWENTY-SIX CONsecutive Successful Operations, by Thomas Savage, M.D., Birmingham. — The operation was performed for the following reasons:—Prolapsed ovary 7, enlarged (cystic ovary) 5, myoma 4, ovarian dysmenorrhœa 3, malformation 3, shrivelled ovary (cirrhosis?) 2, epilepsy 2. In all cases save his first both ovaries were removed, and he insists on the importance of this. The length of incision varied; a small one was preferred when practicable, one just large enough to admit the fore and middle fingers. The writer says, "If, when the ovary is between one's fingers ready for ligature, it is easier to include the Fallopian tube, I do so; if otherwise I leave it." The ligature was passed as low as possible by means of a handled needle, and strong silk used, and the thread of one-half section, after being tied, was secured again round the whole. In regard to indications for the operation, the writer thinks the most important one is bleeding from a fibroid which resists other treatment. As to prolapse, he would only operate when "time and other remedies have failed, health is going or gone, and nothing else offers a reasonable hope of cure." There was no fatal case among the 26; and while the writer gives no definite information as to the effect of the operation on the symptoms, he mentions some individual cases where cure followed.

An Account of Seventy-six Consecutive Cases of Abdominal Section, by Lawson Tait, F.R.C.S.—The operations were as follows:—Ovariotomy 51, with 2 deaths. Under the term ovariotomy the writer includes all operations for the removal of one or both ovaries, and 27 of these were what would by others be called oöphorectomies. In regard to this operation the writer states, "I have now performed it forty-one times with only one death, and in all of them the results have been beneficial: in the immense majority I may say the results are brilliant." For parovarian cysts abdominal section was performed twice successfully. For extra-uterine pregnancy, twice, with one death; hysterotomy, 2—1 death; exploratory incisions, 9; incomplete operations, 3—1 death; suppurating hæmatocle, 4; nephrotomy, 1; hepatotomy, 1; artificial anus, 1; all the latter successful, making a total of 76 operations, with 5 deaths.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Hoang-Nan.—During the past few years considerable mention has been made in the journals of a plant called "hoang-nan," used by the natives of Tonquin as a remedy for leprosy, and said to be of value in the treatment of hydrophobia. The plant is met with on the mountains between Anam and Tonquin. It is a climbing plant, and belongs to the genus *Strychnos*. It is the *Strychnos Gautheriana, Pierre*. The bark is the part used. It is said to resemble the "false angostura" bark. It is said to contain strychnia and brucia. *Physiological Action.*—Sivori, professor of anatomy and physiology at Marseilles, made twenty-five experiments with the tincture of the bark upon frogs and dogs. He found that it differed slightly in its effects from strychnia or brucia. The action of strychnia shows itself in a general manner all over the body. In the case of hoang-nan the tetanic convulsions begin always in the hind legs of the animal, and, gradually spreading over the entire body, become general. In the case of brucia the contractions are more vigorous after death than at the time of death itself. The animals poisoned by hoang-nan show movements after death, but only for a short time. At Trinidad, hoang-nan has been given to twenty-four lepers, and has caused improvement in the symptoms of all but one. At Christianstad, in the Danish Antilles, M. Guillot reports one case of "humid" leprosy treated with marked results, the ulcers especially yielding to the action of hoang-nan and cicatrizing. Two cases are reported treated in Venezuela, also with flattering results, at the town of Camana. At Pondicherry, in India, Desaint and Jobard have treated fifteen cases of leprosy with hoang-nan. Their conclusions are as follows:—1. Hoang-nan is an active remedy destined probably to be of great service, not only in leprosy, but also in the treatment of all indolent ulcers. 2. Its effect manifests itself especially upon the substance of the spinal cord, which it excites strongly. 3. In all lepers it produces at once a general and extraordinary improvement; the patient becomes more active, more joyous, and more vigorous. 4. In about two months anæsthesia disappears, and sensibility is restored more or less, according to the nature of the case. 5. The ulcers change in nature and tend to cicatrize. It has also been found very efficacious in the treatment of serpent-bites, hydrophobia, epilepsy, and convulsions. It is administered in form of pill, and in dose of 1¼ grains several times a day.—*Detroit Therapeutic Gazette*, April 1881.

OLIVE OIL IN GALL STONES.—Further evidence of the value of large doses of olive oil as a solvent in gall stones is adduced by Dr Kennedy in the *Canada Lancet*, March 1881. He writes:—I have already said that should the theory of the separation of the solid from the fluid parts of the oil prove to be the true way of accounting for the formation of the fatty concretions, in that case it is fair to hold that the calculi were not partially, but wholly dissolved. What are the grounds? Undoubted relief was obtained from the symptoms of the presence of gall stones, and the periodical suffering, which in some cases had been of several years' standing, disappeared. Olive oil, the agent employed, is probably the most effective and rapid solvent of cholesterine of any which have hitherto been tried. As to the *modus operandi* of the agent, let it be considered for a moment how the calculi have in the first instance been formed. Cholesterine, we will say, exists in the blood, and in the liver normally in a fluid state, but in minute quantity. In certain abnormal conditions it is formed in excess, and when so formed it tends to become solid and attach itself to floating shreds of inspissated gall or mucus. The process of the formation of a gall stone has commenced, and layer upon layer of cholesterine being deposited, a gall stone is the result. The reverse of this procedure must take place when a calculus becomes dissolved. If an excess of a material which has the property of dissolving cholesterine be now formed in the blood, and through it into the liver, we have the necessary condition for producing this result. Oleine, if it be so assimilated, furnishes the required condition. That the result does take place in a given instance can only be arrived at by the subsequent history of the case.—*Medical and Surgical Reporter*, 7th May 1881.

PERISCOPE OF OTOLOGY.

By DR KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

ON THE MOVEMENTS OF THE MUSCULUS TENSOR TYMPANI IN THE DOG.—From a series of interesting, original, and carefully conducted experiments, Bockendahl draws the following conclusions:—*1st*, The muscular tensor tympani in both the dog and cat is an active factor in hearing, from its influence on the tension of the membrana tympani. *2d*, Its action produces chiefly a revolution of the hammer, and a consequent increased tension of the two unequal halves of the membrana tympani; the axis of revolution is almost parallel with the manubrium mallei. *3d*, Every tone is responded to by a contraction of the muscle, which can be recognised, directed upon the muscle itself, and also at the point of insertion of its tendon upon the bone. *4th*, The intensity of the tone exercises an increasing influence on the contractions of the muscles. *5th*, The higher tones are responded to by greater contractions of the muscles than lower tones. *6th*, With continuous tones a tetanus of the musculus tensor tympani is produced. —A. Bockendahl, *Archiv für Ohrenheilkunde*, vol. xvi. p. 241.

PHYSIOLOGY OF THE EUSTACHIAN TUBE.—*1st*, The Eustachian tube is always open and in direct communication with the air of the pharynx. *2d*, The tubal muscles (the peristaphylinus internus and externus, and the pharyngostaphyline fascia) are intended, by their contraction, to shut, and not to open the tube. In reply to those who hold that the permanent patulence of the tube is dangerous for the membrana tympani, and at the same time a bad condition for hearing, because of the incessant penetration of sonorous waves into the middle ear by the Eustachian tube, M. Fournié made the following experiments. He showed that, by means of tubes varying in their inside diameter from 1 to 4 mm., the ticking of a watch, easily heard through the tube of 4 mm. in diameter, was not heard through the narrowest tube. Hence, the Eustachian tubes being of about the latter small measure in diameter, it follows that the sounds produced in the body of the voice and others are not heard through the Eustachian tube. In a second experiment Fournié showed, by an arrangement of retorts and capillary tubes, that ordinary burning gas, even when under some pressure, does not pass through a capillary tube if this latter is closed at one end. Hence, as this is the condition in the middle ear and Eustachian tube, the latter being a capillary tube closed at one end, no fear need be entertained that violent expiratory movements can endanger the membrana tympani, even admitting that the tube is always open. This same experiment proves that air cannot press through the Eustachian tubes excepting under certain pressure; and as such pressure can be exercised only by the tubal muscles, it follows, according to M. Fournié, that these muscles exercise a constrictive influence on the tube, not a dilating one, as is generally held.—(*Congrès de Reims*) *Revue mensuelle de laryngologie, d'otologie, et de rhinologie*, No. 3, vol. i., October 1880.

AURAL DISEASES AND THEIR RELATIONS TO DISEASES OF THE UTERUS.—This work is divided into seven chapters, as follows:—1. Aural diseases at puberty; 2. Aural diseases appearing periodically with the menses; 3. Diseases of the ear at the menopause; 4. Diseases of the ear supervening upon pregnancy; 5. Diseases of the ear supervening upon acute diseases connected with the menstrual flow; 6. Difficulties in hearing consecutive to uterine affections; 7. Aural maladies inducing difficulties in menstruation. In the above-named chapters we fail to see anything that has not been observed by all aurists, and which are not to be considered as very much more than *post hoc*, rather than *propter hoc*. In fact, we have long considered the slight difficulties of hearing which sometimes appear in females, already diseased in their ears, during menstruation, as far more important than the slight relapses which may occur in any aural patient during any intestinal derangement. As for the point maintained by the author in chapter vii., that a reciprocity exists between the uterus and the ears, so that uterine maladies may be induced by aural diseases, we regard it as purely fanciful on the author's part, and therefore far from proven. Reflex neuroses probably exist between all parts of the body, as all are more or less correlated areas through the sympathetic system; and, in so far as the author of this brochure brings that fact before the mind of the profession, the better it is for the patients, but we must all beware of proving too much, or we shall keep truth for ever "at the bottom of the well."—"Des affections auriculaires et de leurs rapports avec celles de l'utérus," J. Baratoux, *Revue mensuelle de laryngologie, d'otologie, et de rhinologie*, No. 1, vol. i., August 1880: Bordeaux; *The American Journal of Otology*, vol. iii. No. 2, pp. 157, 159.

PERISCOPE OF OPHTHALMOLOGY.

By George A. Berry, M.B.

The Ophthalmoscopic Field of Vision.—Although a great deal of attention has been bestowed on the subject of the magnifying power of the ophthalmoscope under different conditions, only scanty allusions have been made by authors to the size of the field of vision obtained. The following are the results arrived at recently by Ulrich (*Klin. Monatsbl. f. Augenh.*, May):—

The ophthalmoscopic field of vision is the extent of the portion of retina seen by an observer with the ophthalmoscope at one time without changing the position of the mirror. The fundus is, of course, assumed to be illuminated over a sufficiently large area, as is always possible. To simplify the calculations, the plane of the pupil of the eye observed is taken to coincide with the nodal plane, and the aperture in the ophthalmoscope to be identical with the pupil of the observer, whilst different states of refraction are considered as due to differences in the radius of curvature, and not in the antero-posterior diameter of the globe. The changes thus introduced do not materially influence the argument deduced from the formulæ obtained. The size of the field of vision varies directly as the tangent of the visual angle (ϕ). Putting a and b for the semi-diameter of the pupil and ophthalmoscopic aperture respectively, and f for the distance of the ophthalmoscope from the nodal plane of the eye examined, it will be seen at once, on making the construction for *emmetropia*, that—

$$\tan.\ \phi = \frac{a+b}{f}.$$

The formula shows, therefore, that with a constant aperture the size of the field of vision increases as f diminishes and as a increases, *i.e.*, *with the increase in the size of the pupil and diminution in the distance of the ophthalmoscope from the eye.* In ametropia the rays proceeding from any point do not, as in emmetropia, leave the eye in the form of a cylinder whose diameter is determined by that of the pupil, but as diverging (hypermetropia) or converging (myopia) cones. Putting a' for the semi-diameter of the cone at the plane of the ophthalmoscope, if R denote the far point, we have—

$$a' = a\,\frac{R-f}{R},$$

and the *general* formula for the ophthalmoscopic field of vision becomes—

$$\tan.\ \phi = \frac{a+b}{f} - \frac{a}{R}.$$

If R be positive (M) tan. ϕ is less, if negative (H) greater than in emmetropia, in which case $R = \infty$ and the formula reduces to the first.

The *actual* field of vision is, however, necessarily smaller than the *mathematical*, owing partly to the great falling off in brightness of its peripheral portion, and partly to the interference caused by the confused image of the iris, which is, on the contrary, brighter at the periphery, whilst its intensity at the very centre = 0. The extent of the field practically obtained by the direct method of examination is given as equal to little more than two breadths of the disc.

In calculating the size of the ophthalmoscopic field of vision obtained by the indirect method, it is necessary first to take into consideration the limits of distance of the convex lens from the pupil of the eye examined, within which the image of the iris thrown by the lens does not interfere with that of the fundus. In other words, how are the limits of distance within which no rays from the border of the pupil pass through the aperture in the ophthalmoscope affected by the change in size of the pupil, the aperture of the lens, and the distance of the observer from the lens? The formula arrived at by a simple but somewhat lengthy process is—

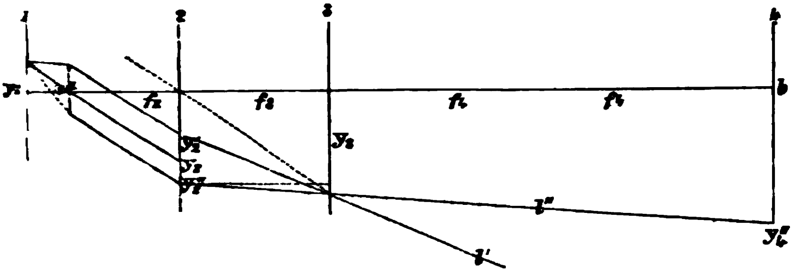
$$f_1 \geqq \frac{bf + \mathrm{RL}f - af_3}{\frac{\mathrm{RL}f_3}{f} - b - \mathrm{RL}} + f.$$

When f_1 = dist. of lens from pupil, RL and f are half the aperture and the focus of the lens respectively, and f_3 = dist. of ophthalmoscope from the lens.

The formula shows that the greater a is, the smaller must f_1 be. But f_1 cannot be allowed to increase indefinitely with the diminution in the size of the pupil, because long before $a = 0$ (when, of course, the pupil could not disappear from the field of vision) the conjugate focus comes to lie between the observer and the lens, and the rays having crossed, no other value for f_1 will exclude the entrance through the ophthalmoscope of rays reflected from the iris. With the following values in mm., $a = 4$, $b = 2$, $f = 60$, $f_3 = 240$, $\mathrm{RL} = 20$, f_1 can vary between 66 and 80 mm., *i.e.*, the lens must be further away from the pupil than the distance of its principal focus. This agrees with the statement made by Helmholtz (*Phys. Optik*, p. 179) that "the image of the iris disappears from the field of vision when the convex lens is held at a distance from the pupil *nearly* equal to its principal focus." The formula shows, however, that by making the aperture of the lens less it may be brought nearer, *i.e.*, f_1 may be diminished.

Having established the conditions that no image of the iris shall disturb the field of vision, he proceeds to the determination of the mathematical ophthalmoscopic field of vision itself.

In the figure, 1 represents the retina of the eye examined, y_1 and ϕ the field of vision and visual angle respectively, 2 the convex lens, 3 the plane of the image, whose distance from $2 = f_3$. $f_2 =$ dist. of lens from a, 4 is the plane of the ophthalmoscope, and f_4 its



distance from the inverted image. A parallel bundle of rays of the diameter of the pupil meets the lens at points y'_2, y_2, y''_2, where they are refracted and meet at a point on 3, and crossing, proceed as divergent rays l'', l', etc.

The limiting condition is, then, that—

$$b \geqq y''_4.$$

The inclination of the ray l'' to the principal axis—

$$\tan. a'' = \frac{y_3 - y''_2}{f_2};$$

$$\text{and } y''_4 = y_3 + f_4 \tan. a''.$$

The condition may then be written—

$$b \geqq y_3 + f_4 \frac{y_3 - y''_2}{f_2};$$

and putting for y_3 and y''_2 their values, f_3 tan. ϕ and f_2 tan. $\phi + a$ respectively, we arrive at the following value for tan. ϕ:—

$$\tan. \phi \lesseqgtr \frac{b + \frac{f_4}{a f_2}}{f_3 + f_4 - \frac{f_2 f_4}{f_3}}.$$

As b and f_3 are constant, tan. ϕ varies with a, f_2, and f_4.

In emmetropia the length f_2 does not influence the course of the rays: f_2 may therefore be allowed to vary within the limits already considered in connexion with the image of the iris. But it is clear that when

$$f_2 = (f_3 + f_4)\frac{f_3}{f_4}$$

the denominator of the fraction $= 0$, and tan. ϕ is therefore $= \infty$. In this case the equation is no good: the field of vision is independent of the size of the pupil. The reason of this becomes evident when it is observed that f_2 and $f_3 + f_4$ are conjugate foci because—

$$\frac{1}{(f_3 + f_4)\frac{f_3}{f_4}} + \frac{1}{f_3 + f_4} = \frac{1}{f_3};$$

and in this position only rays from the very central part of th pupil (the image of the ophthalmoscopic aperture) are concerned i the formation of the field of vision. *That is, when the lens is hel so that the inverted image of the iris just begins to make its ap pearance, the size of the pupil does not influence the extent of th field of vision.*

Again, by allowing f_8 to vary, the influence of the state o refraction on the field of vision may be determined. *The fiel is greater in myopia and smaller in hypermetropia.* As a genera rule, in examining by the indirect method, the illuminated area is smaller than the field of vision. It is therefore an advantage to have a broad flame as the source of light.

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On a Case of Myelitis: being Portion of a Clinical Lecture delivered in the Western Infirmary of Glasgow, 30th March* 1881. By Dr M'CALL ANDERSON, Professor of Clinical Medicine in the University of Glasgow.

THE case which I have to bring under your notice this morning is interesting as affording a good illustration of a spinal affection which you are sure to meet with from time to time in practice, and of the beneficial effects of treatment. This patient, whom you examined with me in Ward II. on 1st February, and who now sits before you, is an unmarried man, æt. 35, a sailor, who came under observation on the 26th January. His father died at the age of 89, and his mother at 47, the causes of death being unknown to him; nine brothers and sisters died in childhood, and two brothers and sisters are alive and well.

Two months before admission, abandoning his sailor life for the winter, he got employment in one of the Govan dry docks, where he had to lie, kneel, or sit on cold iron plates in order to do his work. In consequence of this, three weeks ago he caught a severe cold, which, however, did not lay him aside, but twelve days thereafter, on getting out of bed, he felt a "sleepy sensation" in his feet, and numbness in the middle finger of the right hand, which caused him to stay at home that day. Next morning he attempted to go to his work, but had not gone very far when his knees became so weak that he had great difficulty in getting home; even on leaving the house his gait was like that of a "drunk person." From this time onwards the "sleepy condition or numbness" of his feet spread gradually up to the lower part of his body. The numbness at first complained of in the right middle finger also soon spread to the other fingers of the hand and to the wrist, and three days later the left hand and wrist became similarly affected. For a week prior to admission he experienced great difficulty in swallowing and in speaking, and his breathing was noisy. From the commencement of his illness, his bowels, previously regular, became obstinately constipated; and three days before admission his urine became scanty, high-coloured, and muddy. He always previously enjoyed very good health, with the exception of an occasional cold, and says that he has been as temperate as sailors usually are, only getting drunk while on shore.

On examining him on the 1st February, you will remember that there was complete paralysis of the lower extremities—so complete that he could not even move a toe—but only partial paralysis of the upper extremities. He could move his arms, but not with the same ease and vigour as formerly, and he grasped objects somewhat feebly. On using the dynamometer with the left hand, the indicator registered 35, and with the right only 17 kgs.: the muscles responded imperfectly to electricity. But not only was there paralysis of motion; the sensation also was very defective from the toes up to the chest, and in the hands too, so much so that he could only feel considerable pressure made with the finger or pin-point. The reflex excitability was likewise completely annihilated. But still more serious symptoms than these were manifest, for the breathing was very laboured and noisy. He spoke with difficulty, and in a hoarse whisper, and dysphagia was so great that on attempting to take a drink he was nearly choked, and it was necessary to abstain from feeding him by the mouth. No pain was complained of anywhere, but on examining the spine some tenderness was detected over the last dorsal and first lumbar vertebræ. The application of hot and cold sponges to the spine yielded negative results. The temperature has remained normal throughout, except that in the first week after admission it rose on five occasions up to or above 100°—twice in the morning and three times in the evening—and on the second evening after admission it touched 102°. The day after admission his breathing became so laborious and difficult that for many hours he seemed to be in a dying condition, and he was quite unable to swallow anything.

The symptoms just enumerated pointed to widespread and alarming inflammation of the spinal cord (myelitis), although it was evident that the continuity of the cord was not destroyed by the disease, else we should have had an increase instead of an annihilation of the reflex excitability and reflex spasmodic movements (the spinal epilepsy of Brown-Sequard).

[After referring to the points of diagnosis between myelitis on the one hand and meningitis, spinal congestion, and non-inflammatory (white) softening on the other, Dr Anderson then directed attention to the treatment, as follows.]

The treatment was commenced upon the *27th of January*. On that day he was put upon an air-bed, was kept off his back as much as possible, and the skin over the sacrum, which was red (threatening bed-sore) was sponged frequently with camphorated spirits of wine. A subcutaneous injection of $\frac{1}{100}$ of a grain of sulphate of atropia was prescribed night and morning, and he was fed entirely through the nose by means of a piece of indiarubber tubing on the syphon principle, in the way I demonstrated to you on the 1st February.

On the *28th January* flying blisters to the spine were commenced. On the morning of this day a narrow blister was applied over the lower cervical and upper dorsal region for an hour; on its removal the skin was found to be only slightly reddened, but by the evening, to our astonishment, most complete vesication had occurred. On the 2d February a blister was applied over the tender spot on the spine, at the junction of the dorsal and lumbar vertebræ. On the 10th one was applied to the lower lumbar region, on the 12th to the cervical region, and on the 16th over the middle of the spine. In all, therefore, five blisters were applied, on each occasion for an hour, but none of them produced the slightest vesication, with the exception of the first.

On the *1st of February* the liquid extract of ergot, in doses of half a drachm every four hours, was commenced, a remedy which, like belladonna and its active principle atropia, is reputed to diminish congestion of the cord.

Finally, on the 7th of March, the sister was directed to have the paralyzed parts and the spine rubbed with warm camphorated oil night and morning. The atropia injections were stopped, but the ergot was continued, and full diet was prescribed.

The following notes, extracted from the journal, sufficiently indicate the progress that was made:—

On *29th January* he could move his legs a little, and breathing and swallowing were much easier, so much so that in the evening he took a bowl of porridge and milk by the mouth.

On *30th January* there was no further improvement in the paralysis, but the anæsthesia was not quite so marked. He could also swallow and breathe quite well, but the bowels were as costive as ever, and the catheter required to be used on account of retention.

On *31st January* there was incontinence of urine, but next day this had passed off, and the paralysis of the limbs was a little less marked.

By *3d February* he had gained considerably, could move his legs and bend the knee-joints to a great extent, and could turn himself round in bed. Sensation, too, was much improved, though less so in the right leg and right side of the body than in the left.

On *6th February* the catheter had to be used for the second time, the urine, however, remaining healthy.

On *9th March* it was noted that the improvement continued steadily. The bowels and bladder acted normally, he could breathe and swallow as well as ever, and he could move his arms and legs quite freely, and even walk a few steps with support. But he still complained of some numbness, which, however, was limited to the soles of the feet and palms of the hands.

And now you see him to-day (*30th March*), all his symptoms being gone, with the exception of some numbness in the anterior parts of the soles, where there is a feeling as if a ball was under each foot, and slight paralysis. On testing the hands with the dynamometer, we now find that it registers 75 kgs. on each sid He walks, too, pretty well, but with the knees a little bent, ju like a patient convalescent from a fever. The patellar tendon refle tested for the first time two days ago, is absent.

As far as one can judge from the steady progress which has bee made, I think we may reasonably expect that his recovery will b as complete as it has been uninterrupted; and considering th extreme gravity of the symptoms at the time of his admission, w have reason to congratulate ourselves upon the efficacy of the treat- ment which was adopted.

ARTICLE II.—*On the Actions and Uses of Citrate of Caffein as a Diuretic.* By DAVID J. BRAKENRIDGE, M.D., F.R.C.P.E., Physician to the Royal Infirmary, and Lecturer on Clinical Medicine, Edinburgh.

(*Continued from page* 11.)

THE evidence brought forward by Drs Gubler, Lewis Shapter, and Leech is amply sufficient to prove that in cases of cardiac dropsy especially, and also in some other forms of dropsy, caffein is a powerful diuretic. It is quite unnecessary that I should occupy space in this paper with the many cases in which I have found the conclusions arrived at by these observers regarding the remarkable diuretic action of this drug fully confirmed. I will rather direct attention to the circumstances which seem to modify the action of the drug, on the one hand diminishing or preventing it, and on the other hand assisting and increasing it. Thus we may hope to arrive at a more accurate understanding of its mode of action, and the reasons of the apparent variability of its effects in different cases or in the same case at different times; and also to gain some more precise ideas regarding the cases in which it should be employed, and how it may be administered with most advantage in these cases.

What are the actions claimed for citrate of caffein by previous observers, in virtue of which it is believed to produce its diuretic effect? The results obtained and the conclusions arrived at by physiologists, which bear upon the action of caffein as a diuretic, have been most conflicting. It has been claimed by trustworthy observers that under the influence of this drug the blood-pressure and the amounts of urea and carbonic acid eliminated are all increased; and by equally reliable observers that they are all diminished, and so forth. These opposite results are doubtless due to differences in the animals experimented on, and the size of the doses employed.

Binz states that "in moderate doses it increases the heart's action, both by its direct effect on the organ and also by exciting contraction of the arteries. The blood-pressure and the frequency of the pulse are intensified. There is a very rapid rise of temperature, which in animals may exceed 1·5° Cent. More urea and carbonic acid are excreted and urine secreted than in the normal state. All these symptoms are of relatively short duration. One part of the caffein is excreted in the urine soon after its introduction into the system."[1]

Drs Gubler, Shapter, and Leech have all recognised that the above physiological conclusions point to a double action whereby the diuretic effects of citrate of caffein may be explained.

1st, It may act as a diuretic in virtue of its power of increasing the action of the heart and the blood-pressure, its action in this respect being like, but not identical with, that of digitalis.

2d, It may do so, further, in virtue of a special action which it possesses of directly stimulating the secreting structures in the kidney.

Gubler has pointed out the resemblance of its action in the latter respect to that of jaborandi and other drugs, which by a special action exerted on the secretory nerves of the salivary gland greatly augment the flow of saliva. The resemblance is probably even greater than Gubler supposes, and I purpose in a future paper to show that jaborandi and pilocarpin possess the power of increasing the amount of the urine.

Did citrate of caffein possess markedly both of these properties, it would indeed be a model diuretic, possessing the power to increase the separation of urine both by filtration and secretion. My clinical experience of the drug goes, however, to show that, whatever may be its effect in healthy animals or individuals, in those cases of cardiac and renal dropsy in which its diuretic action is most strikingly manifested this effect must be attributed for the most part, if not entirely, to a remarkable power possessed by the drug of directly increasing the activity of the glandular renal epithelium, and that its action in increasing the general or local blood-pressure, and in this manner the rapidity of the circulation through the kidneys, is, if present at all, its feebler and very much less important action.

The following facts may be adduced as the grounds on which I have been led to this conclusion:—

I. Disease of the renal glandular epithelium would appear to prevent the action of citrate of caffein altogether. In the early stage of acute desquamative nephritis, after all febrile symptoms have subsided, and while such vascular diuretics as digitalis, and other diuretics such as acetate of potash, have proved efficient, citrate of caffein has failed entirely to cause any increase in the amount of urine passed.

Case I.—R. S., aged 44, had been ill for three weeks with acute desquamative nephritis, the result of cold, when he was admitted into Ward 31, New Royal Infirmary, under my care. There was swelling of the eyelids and face, and considerable general anasarca. The urine was scanty, high-coloured, albuminous, and contained granular and hyaline tube-casts. The amounts of urine passed on each of the first three days after admission was 30 oz., 34 oz., and 34 oz. respectively. Citrate of caffein in gr. iij. doses was now administered thrice daily for three days, and the amounts of urine passed on each of these days in their order were 32 oz., 34 oz., and 32 oz. respectively, being a fall rather than an increase under the influence of the drug. The caffein was now stopped, and ten minims of tincture of digitalis with thirty grains of acetate of potash were given instead three times daily. On the following three days 56 oz., 62 oz., and 70 oz. of urine were passed. These results contrast *sharply* and *strongly*.

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[1] *Elements of Therapeutics.*

CASE II.—John Urquhart, aged 40, had been ill for ten days with the same disease before his admission into Ward 31. He was very œdematous, there being œdema of the lungs, slight ascites, and general anasarca. In his case the citrate of caffein, given as above, did not give rise to any increase in the amount of the urine. It caused, on the contrary, a slight diminution, as in the last case; and as its administration was followed by sickness, headache, and vomiting, it had to be suspended. Later on in this case the caffein salt was administered with gradually increasing effect; about three weeks after the first trial had failed the urine rose under its administration to 112 ounces.

In both cases perfect recovery resulted. For good reasons I have refrained from multiplying such experiments in the early stage of desquamative nephritis. I have, however, availed myself in many such cases of the hint thus obtained that one or two gr. iij. doses of citrate of caffein might be useful as a test drug to ascertain the condition of the renal epithelium, and many observations thus made have satisfied me of the accuracy of the conclusion which I have drawn from the two cases referred to, in which a more prolonged use of the drug was tried. This absence of any of the usual marked diuretic action of the drug in disease of the renal epithelium points, on the one hand, to the need of the secreting cells for the manifestation of its diuretic action, and, on the other hand, to its independence of any effect on the circulatory organs. The increasing action of the drug as recovery progressed points also in the same direction.

II. When citrate of caffein acts as a diuretic, not only is the amount of the water in the urine increased, but the amount of urea, *when previously abnormally lowered*, is markedly increased. The quantitative analysis of the urea in the following cases was made for me by Mr John Priestly, of whose scientific ability and accuracy his chapter "On the Contractile Tissues" in Professor Gamgee's work on *The Physiological Chemistry of the Animal Body* is a sufficient guarantee. The diet was not measured in any of the cases, but was maintained at as nearly a uniform standard in each case as possible. The method employed in estimating the urea was Dr Apjohn's modification of the hypobromite of sodium process.

The cases which I give are only three in number, but they are the first three in which the amounts of urea were estimated, and are therefore not selected. The daily amounts of urea passed both before and during the administration of the caffein were measured; and although these cases are few in number, and the interpretation of the results liable to many fallacies, they are important in this respect, that they all show a decided increase in the amounts of urea passed during the administration of the citrate of caffein.

Case I.—W. D., aged 33, suffering from great aortic incompetence, has been under my care since 23d Oct. 1880, suffering from dropsy, breathlessness, and giddiness, etc. During that period the only medicines which have given him any relief have been digitalis and caffein, which he has taken more or less constantly. It struck me that the citrate of caffein and digitalis gave him much more relief than could be accounted for by the mere increase in the quantity of the water, which was never very high. To satisfy myself I had the amounts of urea and urine measured during four periods.

First, For three days while tincture of digitalis and citrate of caffein were still administered.

Secondly, For three days after the administration of these drugs had been suspended.

Thirdly, For three days during which citrate of caffein was again administered alone.

Fourthly, For several days during which both caffein and digitalis were administered.

During the first period, while both drugs were still given, the daily amounts of urine passed on each of the three days in their order were, 36 oz., 36 oz., and 34 oz. of urine, containing 380·16 grs., 382·69 grs., and 388·96 grs. of urea respectively. The amounts were remarkably steady.

During the second period, when no drugs were given, the daily amounts of urine were, 34 oz., 24 oz., and 22 oz. of urine, containing 359 grs., 264 grs., and 280·72 grs. of urea respectively. We have thus a fall of 12 oz. in the amount of urine, and of over 100 grs. in the amount of urea passed daily.

During the third period gr. iij. of citrate of caffein were administered thrice daily. On the corresponding three days the amounts of urine passed were, 25 oz., 25 oz., and 42 oz., and the amounts of urea contained in each of these, 341 grs., 308 grs., 351·12 grs. Thus we have, without the aid of the digitalis, a rise of 70·4 grs. of urea, or to within 30 grs. of the amount passed while both digitalis and caffein were given together.

During the fourth period, when digitalis was added in ♏x. doses to the citrate of caffein, a very remarkable result followed. The amount of urea rose on the first day from 351·12 grs. to

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On a Case of Myelitis: being Portion of a Clinical Lecture delivered in the Western Infirmary of Glasgow, 30th March* 1881. By Dr M'Call Anderson, Professor of Clinical Medicine in the University of Glasgow.

The case which I have to bring under your notice this morning is interesting as affording a good illustration of a spinal affection which you are sure to meet with from time to time in practice, and of the beneficial effects of treatment. This patient, whom you examined with me in Ward II. on 1st February, and who now sits before you, is an unmarried man, æt. 35, a sailor, who came under observation on the 26th January. His father died at the age of 89, and his mother at 47, the causes of death being unknown to him; nine brothers and sisters died in childhood, and two brothers and sisters are alive and well.

Two months before admission, abandoning his sailor life for the winter, he got employment in one of the Govan dry docks, where he had to lie, kneel, or sit on cold iron plates in order to do his work. In consequence of this, three weeks ago he caught a severe cold, which, however, did not lay him aside, but twelve days thereafter, on getting out of bed, he felt a "sleepy sensation" in his feet, and numbness in the middle finger of the right hand, which caused him to stay at home that day. Next morning he attempted to go to his work, but had not gone very far when his knees became so weak that he had great difficulty in getting home; even on leaving the house his gait was like that of a "drunk person." From this time onwards the "sleepy condition or numbness" of his feet spread gradually up to the lower part of his body. The numbness at first complained of in the right middle finger also soon spread to the other fingers of the hand and to the wrist, and three days later the left hand and wrist became similarly affected. For a week prior to admission he experienced great difficulty in swallowing and in speaking, and his breathing was noisy. From the commencement of his illness, his bowels, previously regular, became obstinately constipated; and three days before admission his urine became scanty, high-coloured, and muddy. He always previously enjoyed very good health, with the exception of an signally failed to produce diuresis, the two together immediately produced a very marked result. Assuming, then, that these drugs are complementary of one another in their diuretic action, and falling back on our conclusions regarding the physiology of diuresis, this view is further supported by the fact that it will be found to explain all the difficulties in this and other similar cases. Thus—

1st, Citrate of caffein failed to act at first because, the blood-pressure being very low, a transference of work must have taken place from the filtering to the secreting structures in the kidney, and the renal epithelium, being consequently overworked or exhausted, could not be further stimulated.

2d, Digitalis failed to produce any marked diuresis at first, because the slight increase in the blood-pressure and in the amount of blood passing through the kidney led, in the first place, to an increased amount of filtration and a corresponding transference of work back from the secreting to the filtering structures; and, as I have before stated, this is not necessarily represented by an increase in the amount of the urine.

3d, That digitalis, although it had caused no increase in the urine, had in a few days *effected a very decided change in the conditions in the kidney*, was now evident; for the same doses of citrate of caffein which at first failed entirely, now, when administered in addition to the digitalis, caused a sudden and extraordinary rise in the urine in one day from 15 to 62 ounces, and in six days to 139 ounces.[1] That the digitalis, which produced no rise in the urine when given alone, contributed to this result was clear from the fact that the omission of it for one day caused a fall in the amount of urine from 139 ounces to 65 ounces, and its resumption a rise again to 120 ounces.

With the low blood-pressure which we had in this case, it is difficult to understand exactly how digitalis modified the conditions in the kidney so as to favour to such a degree the special action of the caffein. We must, however, in the first place, admit that *the secretion of so large an amount of urine is proof in itself that a*

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[1] It is well known that often, under the digitalis treatment, no marked increase in the amount of the urine may occur until about the third or fourth day, when a very rapid and considerable rise may occur.

This increased diuresis from digitalis is, if very considerable, accompanied by and chiefly due to increased blood-pressure.

The case given is specially selected, because in it the separation of a large amount of urine was associated with a pulse so feeble and irregular as to make it impossible that the diuresis could be due to increased blood-pressure.

Those who maintain—although it has never been demonstrated—that digitalis is a stimulant of the renal secreting structures, admit that this is its lesser and feebler diuretic action, and will hardly maintain that the greatly increased diuresis in this case was due to this action.

Doubtless, in many cases, after transference of work from the secreting to the filtering structures in the kidney has been effected by digitalis, its action as a vascular diuretic becomes rapidly manifested, and the combination of this drug with citrate of caffein is in such cases doubly effective.

correspondingly large amount of blood must have circulated through the kidneys.

It seems to me, however, that only part of this increased circulation can, in a case with such a condition of the pulse as we have here, be fairly attributed to the action of digitalis on the circulation. In addition to this *vis a tergo*, if we admit that citrate of caffein acts as a true secretory stimulant of the renal epithelium, we are compelled further to admit that it must by this action cause an increased *vis a fronte.* For the separation by secretion of a large amount of urine from the blood must proportionally facilitate the passage of the blood through the vessels of the kidney, and consequently increase the amount of blood entering into and passing through that organ.

Further, if this be the case, the amount of urine separated by filtration will be also increased by this *vis a fronte;* for, as we have already seen, the blood-pressure remaining the same, the amount of urine removed from the blood by filtration varies directly with the amount of blood passing through the glomeruli. Thus the vascular and secretory diuretics are in their actions not only complementary of one another, but, further, each promotes the action of the other. In this way we can quite understand the passage of a considerable amount of blood through the kidneys, and the separation of a large amount of urine from it, notwithstanding a low arterial blood-pressure, under the combined actions of digitalis and caffein or other similar combinations, when either alone has failed to have any marked effect.

The further reports of Rebecca H.'s case show that under this plan of treatment the dropsy and other abnormal conditions gradually disappeared. Iron, quinine, and arsenic were after a time substituted for the diuretics. The patient made a good recovery. Her pulse became regular, fairly full and strong, and on 18th January, thirty-seven days after her admission, and about three weeks after the diuretics had been stopped, she passed 78 ounces of water.

We have already seen that citrate of caffein increases the elimination of urea by the kidneys when there has been a previous fall in the amount of urea excreted. It might be expected that if, as I have supposed, digitalis, by increasing filtration and by bringing more blood to the renal epithelium, very markedly increases the action of the caffein, it should manifest this influence by an increase not only in the amount of urinary water excreted, but still more in the amount and percentage of urea. The following cases show this to be the case, and that the increase in the amount of urea is greater than can be accounted for by mere filtration.

In the case of P. M'A., the urea, which under the influence of citrate of caffein alone had risen in two days from 83·6 grs. to 309·54 grs., subsequently fell somewhat, so that on the sixth and seventh days of the administration of that drug it amounted to 277·2 grs. and 280·5 grs. In addition to the citrate of caffein, ten minims of tincture of digitalis were now given three times daily. On the following day the amount of urea was 362·2 grs., being an increase in one day of 84·7 grs.

In the case of W. D. we have already seen that the daily amount of urea, which fell when the administration of citrate of caffein and digitalis was suspended, rose under the administration of citrate of caffein from 280 grs. to 351·12 grs. Digitalis was now added to the citrate of caffein, as in the last case. On the first day the amount of urea rose from 351·12 grs. to 406·52 grs., and on the second day to 619·52 grs., being an increase in this short period of 268·40 grs. per diem. But it is still more interesting to note that while ordinarily, other things being equal, although an increase in the amount of the urine is usually associated with an increase in the total amount of urea passed, the percentage of urea is diminished, and *vice versa*, in these cases not only was the amount of the urine and of the total urea increased, but the percentage of the urea was either not diminished or was actually increased.

In the first case the amount of urea per ounce was, both before and after the addition of digitalis, about 9·2 grs. per ounce.

In the second case, before the digitalis was commenced, the proportion of urea was 8·36 grs. per ounce, whereas after the digitalis was commenced the amount was 9·68 grs. per ounce on the first day, and, on the second, 14·08 grs. per ounce.

Let me now gather together the foregoing facts which favour the view that citrate of caffein possesses a special power of stimulating the secreting cells in the kidney, and that its action as a vascular diuretic, if present at all, is very feeble.

1st, It fails to produce any increase in the amount of the urine in cases in which the renal epithelial cells are diseased,—as, *e.g.*, in the early stages of desquamative nephritis,—even when vascular and saline diuretics produce a considerable increase.

2d, It fails to do so in cases of cardiac dropsy in which, from physiological considerations, we may conclude that the glandular epithelial cells are already doing a maximum amount of work, or are exhausted by transference of work to them from the filtering apparatus.

3d, When it acts as a diuretic it increases not only the amount of water passed, but also the amount of urea very markedly, if it has previously been abnormally lowered.

4th, Its action is strikingly complementary of that of digitalis, so that, in cases in which both given alone have failed, the two administered together, according to the view suggested, have produced very striking diuretic results.

5th, This increase in the amount of the urine may be independent of any increase in the general arterial blood-pressure sufficient to account for it on any theory of general or local blood-pressure.

6th, The combination of digitalis with citrate of caffein causes a striking rise in the amount and percentage of urea, which cannot b explained on any filtration hypothesis.

How citrate of caffein stimulates the renal glandular epithelia cells is still a matter of conjecture. Probably its action is simila to that of jaborandi or pilocarpin on the salivary and sweat glands In a future paper I hope to show that the latter substances have a diuretic action like that of caffein. On the other hand, caffein has been observed in exceptional cases to cause both sweating and salivation.

From the foregoing considerations and my whole experience of this drug, the following practical conclusions regarding the employment of citrate of caffein as a diuretic may be deduced:—

1st, In cases in which the renal glandular epithelium is diseased, is already doing a maximum amount of work, or is exhausted, this drug is unsuitable and should not be administered.

2d, During recovery from acute desquamative nephritis, when renewal of the renal epithelium has reached a certain point, citrate of caffein cautiously administered has appeared to me to have had a decidedly beneficial effect; possibly in such cases it may exert a trophic as well as a secretory stimulant influence.

3d, In such cases, as the arterial blood-pressure is tolerably normal, citrate of caffein should be given alone, not in combination with a vascular diuretic.

4th, In cases of cardiac disease, with absence of compensation, and resulting diminution in the blood-pressure and flow of blood through the kidney, general dropsy, and transference of work in the kidney from the filtering to the secreting structures, a vascular diuretic, such as digitalis, must be employed in the first place to restore those conditions in the kidney which are essential to the action of citrate of caffein. For this purpose digitalis should be administered for a short period, one to three or four days, before commencing the citrate of caffein.

5th, Citrate of caffein, employed in this manner in conjunction with digitalis, which, for obvious reasons, must not be discontinued when the caffein is commenced, is a diuretic of extraordinary power, acts with great rapidity, and is especially valuable in this respect, that it causes a great increase in the elimination of urea (and probably of other solids) as well as of water.

6th, It must, however, be remembered that special and powerful stimulation of any gland, especially if it be in a state of malnutrition, may, and usually does, lead sooner or later to exhaustion, and must, therefore, be regarded as at best a temporary expedient and of limited duration.

7th, For this reason very large doses of citrate of caffein should be avoided. I have found gr. iii., administered once, twice, or three times daily, according to the circumstances of the case, amply sufficient for all purposes.

8th, Whenever the beneficial effects of the drug have been attained, we should at once endeavour to render them permanent by suitable diet, well-selected chalybeate and other tonic remedies, or other remedial measures indicated by the special circumstances of the case.

9th, Finally, I should state that in cases of very great ascites, in which the blood-pressure in and the flow of urine through the kidneys is interfered with by pressure on the kidney and the renal artery and vein, and in which the pressure of the urine within the capsules is increased by pressure on the ureters, neither vascular nor secretory diuretics, alone or combined, can act efficiently until the pressure of the ascitic fluid has been got rid of.

10th, The citrate of caffein may be administered either in pill or in solution.

ARTICLE III.—*Quarterly Report of the Royal Maternity and Simpson Memorial Hospital.* By ANGUS MACDONALD, M.D., Physician to the Hospital.

IN the report I have the honour now to submit to the Society I am in the happy position of being able to state that there has been no maternal mortality during the quarter either among intern or extern cases. I am entirely indebted for the preparation of the materials, as also for their elaboration, to my residents in the Hospital during the quarter, viz., Messrs Wells and Hodsdon, whose careful notes of the cases afforded the most accurate and comprehensive groundwork for the digest. I am, however, especially under obligation to Mr Wells for constructing the entire report from these materials, and I take this opportunity to express my feelings of gratitude therefor.

During the three months ending 31st April the number of cases attended amounted to 155. Of these 99 were extern cases, while 56 were delivered in the Maternity Hospital. Of the former, 13 were primiparæ, and 86 multiparæ; while of the latter, 36 were primiparæ, and 20 multiparæ.

Of the extern cases the average ages were—multiparæ, 30 years; primiparæ, 22½.

Of the intern cases the average ages were—multiparæ, 26 years; primiparæ, 20 years and 8 months.

The infant mortality and sexes of infants were as under:—

			Stillborn.		Putrid
	Males.	Females.	Males.	Females.	Cases.
		EXTERN CASES.			
Multiparæ,	51	39	4	2	2
Primiparæ,	3	10	0	0	0
		INTERN CASES.			
Multiparæ,	10	10	0	3	0
Primiparæ,	22	14	5	1	4

AVERAGE DURATION OF STAGES OF LABOUR.

	First Stage.	Second Stage.	Third Stage.
Multiparæ,	10 h. 29 m. (19 cases).	1 h. 9 m. (19 cases).	8 m. (19 cases).
Primiparæ,	18 h. 36 m. (31 cases).	1 h. 26 m. (34 cases).	8½ m. (35 cases).

In extern cases the data procurable are not sufficiently accurate to make statistics at all reliable.

The presentations in intern cases were as follows:—

L.O.A.	L.O.P.	R.O.A.	R.O.P.	R.M.P.	L.S.A.	R.S.P.
34	2	4	12	1	2	1

Of the R.O.P. presentations two were persistent, one of these being in a fully developed infant, while the other was premature.

There has been no maternal death during the puerperium of either intern or extern cases.

COMPLICATIONS.

Among the 99 extern cases there were the following complications:—

Four cases of plural birth (twins). In three of these the birth had occurred before the arrival of the attendant. The sexes were as under:—

In three cases both were males, while in the fourth the sexes were male and female.

The presentations were,—

1. Both vertex.
2. Both vertex. The placenta had only one amniotic sac, and was exhibited at the Obstetrical Society.
3. Vertex and footling.
4. Both vertex, L.O.A. and R.O.P., one child being much larger than the other.

In No. 1 both infants survived; in No. 2, owing to the entanglement of the cords, the first child died during birth; in No. 3 both children died within three days; in No. 4 both survived.

A case of breech presentation. Child not delivered alive.

A case in which there was extensive general anasarca in the fœtus, and considerable hydramnios. There were no dropsical symptoms in the mother. The child had evidently been dead some little time, the skin on the feet and hands having begun to peel off. Owing to the great enlargement of the child's body, no progress was made after the birth of the head, and the nurses attending the case had to send for assistance. On arrival it was found that the head had been born twenty minutes. Firm pressure was at first applied from above. The uterus was felt to contain a great quantity of fluid, and was not easy to manipulate; and the woman complaining greatly of the pain, resort was had to traction from below, and after a good deal of force had been used the child was extracted.

A case of anencephalous fœtus, sixth month, with enormous hydramnios. The face presented. The heart beat for some time after birth, but no respiratory effort could be induced, although the lungs were filled with air by the passage of a catheter into the trachea, tracheotomy having been performed. The insufflation of the lungs with air had a marked effect in increasing the number of the heart's contractions and their strength. The medulla oblongata in this case seemed to be absent. The placenta was calcareously degenerated and universally adherent to the uterus, and had to be removed from the uterus by the hand. In both this case and the previous one the uterus was washed out, immediately after delivery, with the douche and glass tube to be subsequently spoken of, and on the following day the vagina was washed out. The solution employed was carbolic acid 1–50 of tepid water. In both these cases the temperature on the day following was normal.

There were four cases of uterine inertia requiring the use of forceps. In all these cases the woman had been some time in the second stage before instruments were employed. In two of these the ordinary Simpson's forceps were used—in one Professor Simpson's axis-traction forceps, and in one Tarnier's forceps. In the case where Simpson's axis-traction forceps were used there was slight pelvic contraction, as ascertained by the pelvimeter and the hand. In all instrumental cases the vagina and uterus were gently washed out with 1–50 carbolic lotion immediately after delivery, and the vagina alone was washed out the following day. In no instrumental case was there perineal laceration.

INTERN CASES.

Before considering the intern cases, a few details regarding the management of the wards may be given.

In each ward, during both day and night, an aqueous emulsion of carbolic acid 1–10 was vaporized by means of a spirit lamp. When the ward was more than usually full, two such apparatuses were kept working.

Napkins dipped in carbolic and subsequently dried were employed in every case. It was found especially needful to dry that part of the napkin which rested under the buttocks, as otherwise an abrasion of the skin was apt to occur. All dirty napkins were at once placed in a pan containing carbolic solution 1–20. The vagina of each patient was washed out with slightly warm water containing 1–60 of carbolic acid thrice daily by means of a douche and a glass tube, each patient having her own special glass tube, which, when not in use, was kept under 5 per cent solution of carbolic acid. In cases where the lochia were more than usually offensive, the vagina was washed out four to six times daily. The patients seemed to find these vaginal douches very grateful.

It was noticed that after a stay of three weeks or so in a ward the temperature began to rise all over the ward, and in these cases a move was at once made to the other ward, whilst the ward previously occupied was thoroughly fumigated. Any case showing the slightest doubtful symptoms was at once isolated. As a preventive measure against gonorrhœal ophthalmia, the eyes and face of every new-born infant were at once washed with 1–50 carbolic solution, some of it being dropped in between the lids. In all there were two cases of ophthalmia, one previous to this treatment and one subsequent to it.

Immediately after delivery the vagina of each patient was well washed out with 1–60 solution.

Among the 56 intern cases there were 5 cases of instrumental delivery. Only one of these was a severe case, with marked pelvic contraction. The patient was a primipara. In it the measurements of the pelvis were—

Il. cr., 9¼ ; il. sp., 8½ ; inter-trochant., 10⅜.
Ext. conjug., 7 ; diag. conjug., 4¼ ; true conjug., 3¼.

The patient having been four hours in the second stage of labour, and the measurements indicating a justo-minor pelvis, Dr Macdonald applied the ordinary Simpson's forceps. With these sufficient progress was not made, and so Tarnier's instrument was substituted, and delivery effected after very considerable traction. The fœtal heart was heard beating very slowly when the head was on the perineum. After some time the child was resuscitated, but it subsequently died. The perineum was quite intact.

There was a case of face presentation, R.M.P., in which the mechanism was that normal to such cases. Dr Macdonald delivered the head when it was nearly on the perineum by short forceps.

In another operative case uterine inertia caused the interference by forceps, the second stage having then lasted some hours and there being no progress.

In another case where forceps were used, the patient was the subject of right hemiplegia and aphasia, the result of a previous labour, and probably due to embolism occasioned by mitral stenosis, from which she suffered. After a fair recovery she was removed to her own home, and whilst there was evidently neglected, for when removed to the infirmary, where she subsequently died, she was suffering from extensive bed-sores.

In the last instrumental case the patient had a slight amount of contraction at the outlet, the ischial tuberosities being abnormally near to each other; and the patient being exhausted by a long second stage, the uterus had not power to expel the head. This patient had suffered from chronic gonorrhœa before her confinement, which was treated at first with injections of sulphate of zinc, and subsequently by injections of copaiba. After delivery a considerable portion of the vaginal walls near the outlet sloughed, and as carbolic solution was found to cause much pain, a solu-

tion of salicylic acid, 1–300 in glycerine and water, was injected, and a pledget of salicylic wool soaked in salicylic acid dissolved in glycerine was used to keep the raw surfaces apart, and constantly renewed to prevent any discharge accumulating. She made an excellent recovery, and the vagina healed satisfactorily.

In two cases where the lochial discharge was very offensive and high fever was present the uterus was washed out with 1–50 carbolic, with the effect in both instances of bringing away stinking *debris*. The temperature subsequently fell in a marked degree. In the latter of the two cases recourse was had to this procedure on four occasions with markedly good results. In this case there was a diphtheritic-looking condition of the vagina near its outlet, and the microscope showed a far larger number of micrococci than usual. Salicylic acid in glycerine applied on salicylic wool was again employed to keep the abraded surfaces of the vagina apart. This dressing proved suitable, and the patient ultimately did quite well.

There was one marked case of perimetritis. This patient had had a first stage lasting over fifty hours. The delivery, however, was natural. The patient's condition gave rise to grave anxiety for about a week, but after this she rapidly improved.

Perineal Laceration.—In all those operated upon silkworm-gut sutures were employed, a small sponge being previously passed into the vagina to prevent blood from coming between the raw surfaces. Among multiparæ there were six cases of perineal laceration. In one of these it was due to the yielding of an old cicatrix. In three of the six cases silkworm-gut stitches had to be inserted. In all six cases healing was satisfactory. Among primiparæ there were 11 cases. In four no stitches were needed, and all healed well. In seven cases stitches were required. In one of these—the case of sloughing of the vagina above referred to—there was no healing whatever; in another case there was only partial healing; while in the remaining five there were firm cicatrices, and the stitches were removed on the eighth or ninth day.

Percentage of Lacerations.—Multiparæ, 30 per cent.; primiparæ, 30$\frac{5}{9}$ per cent.

Infant Mortality.—One child died as a result of delivery in the severe forceps case above alluded to. Another premature infant died of hæmophilia within 48 hours of its birth, bleeding from the roof of its mouth, from between two of its fingers, and from the circumference of its navel. One premature infant died two hours after birth. One premature infant born on the doorstep of the Hospital died, and four children were born putrid.

High Temperatures.—The highest temperature registered was 105°. This was in the severe case of stinking lochia already alluded to. Out of the 57 cases treated in the house there were only 7 who had not at some period of their puerperium a temperature of 100° or over, and only 16 who had not during the same time a temperature of 101° or over; 9 had temperatures of 104° or over; 18 of 103° or over. 105° was registered once in the morning and once in the evening in different patients. A comparative average of temperatures in the upper and lower wards yielded negative results.

An attempt was made in the following manner to ascertain the normal temperature chart during childbed. The cases that were abnormal were in the first place excluded, then every case that was the least doubtful. There remained of the 55 cases only 30. The observed temperatures of these 30 cases were then added together, both for the morning and the evening of each day, and these amounts divided by 30. This was done for ten days after delivery. The average temperature thus obtained is noted accurately in the accompanying chart. It will be seen that the temperature begins nearly normal; that for the first week there is a distinct tendency to subnormal temperature in the morning; that from the third to the seventh day there is a tendency to slight rise in the evening, the greatest elevation being on the third day, when the average temperature of 99°·5 is attained. After the seventh day the chart is practically a normal one.

The average pulse-rate in the 30 cases was also taken, and is given, both for morning and evening. It will be noticed that the law of slow pulse during the lying-in period is well borne out by the generally low average rate. But it is also interesting to notice how pulse and temperature vary together. Thus the highest pulse-rate—79·03—coincides with the highest temperature—99°·5 —on the evening of the third day.

Note on the Presence of Sugar and of Albumen in the Urine of the Lying-in Woman.

During the last three months on which I was on duty at the Royal Maternity and Simpson Memorial Hospital I caused careful observations to be made on the urines of certain patients in regard to the much-vexed questions of albumen and sugar. The urine which was examined was all obtained after catheterization, so that the possibility of any elements from the genital passage getting mixed with the urine was thereby completely excluded.

Sugar.—In 35 cases tested for sugar it was found present at some time or other during the puerperium in all of them; 34 of the 35 cases were consecutive. The amount of sugar varied from 1 to 8 per cent. There was not, as in diabetes, an increased quantity of urine accompanying the sugar.

We failed to discover any direct connexion between tension in the mammary glands and the presence of sugar in the urine, as insisted upon by Hempel, *Archiv für Gynäk.*, Bd. viii. S. 312.

The testing was most carefully performed by my house-surgeons, Messrs Wells and Hodsdon. The following is an account of the various methods followed in order to secure accuracy. The results

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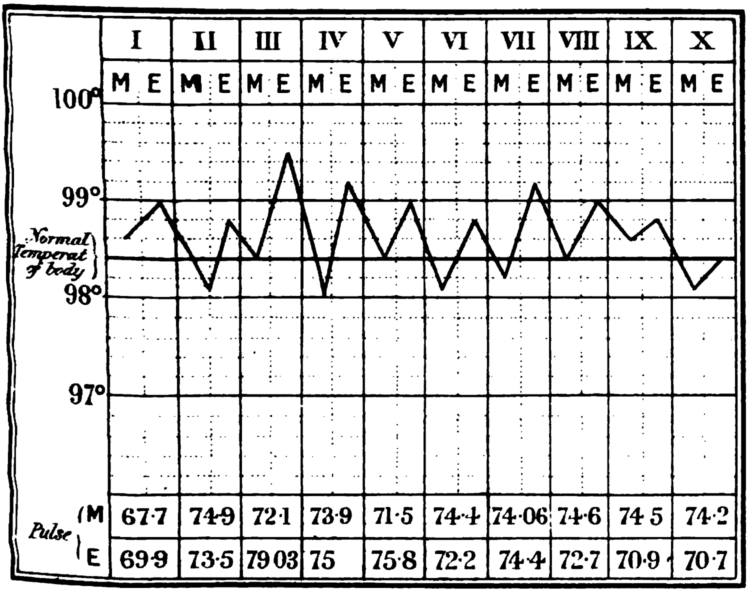
Normal Temperature Chart and Pulse Rate of the Puerperium, as Calculated from Thirty Selected Cases.



Pulse	I	II	III	IV	V	VI	VII	VIII	IX	X
M	67·7	74·9	72·1	73·9	71·5	74·4	74·06	74·6	74 5	74·2
E	69·9	73·5	79 03	75	75·8	72·2	74·4	72·7	70·9	70·7

clearly prove that during the puerperium, from some cause or other, the woman's urine contains as a rule an abnormal amount of sugar.

Moore's Test.—Caustic potash and boiling, only used occasionally, not being very accurate.

Trommer's Test.—Sulphate of copper and caustic potash, used occasionally, the most usual test being,—

Pavy's solution, consisting of—

Cupric sulphate, ...	grs. 320.
Neutral potassic tartrate, . .	„ 640.
Caustic potash, ...	„ 1280.
Distilled water, ...	℥xx.

This is boiled with the suspected urine, when, if sugar be present, the yellow precipitate of suboxide of copper seen in Trommer's test appears.

Piffard's cupro-potassic paste was used at times, but not found to act so well as Pavy's solution.

Batger's bismuth test was used when the urine contained no albumen. This is an excellent and delicate test. When albumen was present a modification of the above test was employed, known as Frohn's reagent. This is prepared as follows:—1·5 gram freshly precipitated basic bismuth nitrate is added to 20 grams of water and heated to boiling; then 7 grams potash iodide and 20 drops of hydrochloric acid are added. The reagent, which is orange-red, is added in small quantity to the suspected urine, when an orange-coloured flaky precipitate results. The mixture is then filtered and concentrated caustic potash added, when the colour disappears. The solution is then boiled, when, if sugar be present, a gray or black colour results in the form of a flaky precipitate, the colour varying with the amount of sugar present. This is an excellent test.

To corroborate these tests the fermentation test was occasionally used.

Albumen.—Some of the observations in regard to albumen were vitiated by misunderstanding on the part of the nurses as to the necessity of, on all occasions, using a catheter in obtaining the urine. Every doubtful case was accordingly discarded; and after this had been done there remained 21 accurately observed cases. Of these 21 cases 15 presented albumen in their urine, or 71·4 per cent. of the cases. Of these 15 cases the amount of albumen present was only a slight trace in 5 of them. In some of the cases it amounted to one-third the bulk of the urine. In none of these albuminous cases could the strictest microscopic examination detect any renal tube-cast or other evidence of kidney disease. In none of these cases was there any indication of eclampsia.

The inference I am inclined to draw from such observations coincides with what I have long entertained as a fixed belief, and is that we should not be unduly alarmed at the appearance of a small amount, or even of a considerable amount, of albumen in the pregnant or lying-in woman's urine, provided we are able to prove that there is no structural involvement of the kidney; that, in fact, not so much the amount of the albumen as its causation ought to concern us or make us anxious.

ARTICLE IV.—*Acute Anæmic Dropsy; an Epidemic Disease recently observed in Mauritius and India.* By ANDREW DAVIDSON, M.D., F.R.C.P. Edin., etc.

HISTORY OF THE EPIDEMIC.

THE disease which I have already described as acute anæmic dropsy broke out in Mauritius towards the end of 1878. In November of that year Dr Clarenc remarked the prevalence of a peculiar and apparently contagious form of dropsy in the interior of the island, which, there is reason to believe, had already made its appearance in September or October preceding, but had been confounded with the œdema or anasarca so frequently met with in Mauritius as a symptom of the malarial cachexia. By January 1879, the disease had clearly assumed the character and attained the dimensions of an epidemic. It spread rapidly over the whole island, affecting chiefly, but not exclusively, the Indian population, attained its acmé in February and March, then gradually declined, and may be said to have practically died out by July, although a few isolated cases are still reported from time to time.

During the epidemic prevalence of the disease it is believed that from 80,000 to 100,000 (nearly one-fourth of the entire population) were attacked. The mortality was slight in proportion to the numbers affected, only 726 deaths having been registered as due to acute anæmic dropsy during the year 1879.

Having been called upon by the government of Mauritius to investigate and report upon the epidemic, I drew up an account of the disease, which was circulated in India and the colonies to which coolie immigration is carried on, in the hope of obtaining further information upon the subject. It was then discovered that the same disease had been epidemic in some parts of Bengal, where it was first observed in 1877; and, further, that before its appearance in Mauritius the disease had prevailed with marked intensity at Garden Reach, in the southern suburbs of Calcutta, whence the coolie ships depart for that island. Dr M'Leod, the health officer for Calcutta, described the Indian epidemic under the title of the "new disease," and his description does not leave the slightest room for doubt as to the identity of the Mauritian and Indian epidemics.

Although we have no official evidence of the disease having existed on board any of the vessels by which immigrants were introduced from Bengal, the information obtained by Dr Clarenc from Indian labourers who had arrived from Calcutta in 1878 renders it highly probable that persons suffering from the disease were actually introduced from Calcutta, and that the first cases of the disease in Mauritius occurred among those with whom these persons resided. We are thus justified in concluding that acute anæmic dropsy was introduced from India into Mauritius, and the circumstances of its introduction and spread favour the view that it is contagious.

In describing the characters of this disease I shall make use of the report already referred to, omitting such details as are not essential for our present purpose.

SYMPTOMS.

The symptoms of acute anæmic dropsy were the following:—Anasarca of the lower extremities, often extending to the upper extremities and trunk—seldom to the face, and only in the worst cases complicated with ascites, hydro-pericardium, and hydrothorax. The dropsy was preceded by diarrhœa or vomiting, or both, with deep-seated pains in the limbs, epigastrium, or abdomen, and was accompanied with slight fever, and in most cases by a rubeolar skin eruption disappearing under pressure, sometimes ending in petechiæ or phlyctænæ and desquamation. The disease, sudden in its commencement, followed a chronic course, often lasting from three to six weeks—the tendency to œdema of the feet persisting after the patient felt otherwise well. The patients, generally Indians, were very anæmic, the blood watery, with marked diminution of the red blood cells and increase of leucocytes and granules.

Dropsy.—The anasarca was one of the most striking features of the disease. The patient may have had an attack of vomiting and purging without thinking much of it, probably ascribing these symptoms to some indiscretion in diet, when swelling of the feet and legs attracted his attention and led him to seek advice. But not only was the dropsy the symptom that usually first excited the suspicion of the patient; it was the one that impressed itself most upon the physician,—it was one of the earliest, one of the most marked, and a constant symptom of the disease. Hence the physician who first recognised the disease described it as "*hydropsie scorbutique aiguë*" before he had time to formulate a theory of the disease; and it was generally spoken of as "*epidemic dropsy*," "*acute anæmic dropsy*," or "*acute dropsy*" by those who had not adopted any special pathological view of its nature.

The dropsy was usually preceded by diarrhœa and vomiting, pains in the limbs and epigastrium, and often by rigors and fever, but cases occurred in which the dropsy was the first symptom.

It usually began about the feet or malleoli, and in a considerable number (perhaps a majority) of the cases it was confined to the feet and legs. In a few instances it was observed to begin in the hands. When the disease was more severe, the anasarca spread to the thighs, trunk, and upper extremities. When the anasarca was general, the skin in the epigastric region became so infiltrated as to render palpation and percussion difficult. Ascites, hydro-pericardium, and hydro-thorax sometimes supervened in those instances in which the anasarca was general.

It was noticed that the swelling disappeared or greatly diminished during the night and increased by day. This was the result of position and repose, and not to be ascribed to periodicity, as some supposed.

The dropsy was not only the most obtrusive, it was also the most persistent symptom of the malady. It not unfrequently remained after the patient felt quite well in other respects, and even after the labourer was able to resume his work in the fields. When the œdema as a permanent symptom had disappeared, slight swelling of the feet frequently occurred after a day's hard work or a long walk.

Diarrhœa and Vomiting.—The disease was in most instances ushered in by diarrhœa and vomiting. Dr Clarenc remarks that the premonitory diarrhœa is usually very severe, resembling cholera in the frequency of the calls to stool. The motions were generally yellow, green, or white, seldom bloody. As a rule, the patient went to stool from ten to twenty times in twenty-four hours. The diarrhœa, however, was seldom obstinate, usually yielded readily to treatment, and generally subsided spontaneously in a few days.

Vomiting occurred perhaps in three-fourths of the cases. It was accompanied with slight nausea and considerable epigastric distress, often amounting to pain, which persisted after the vomiting ceased.

These symptoms were occasionally noticed to occur after the dropsy was established, but this was quite exceptional.

The Skin Eruption.—In a large proportion of the cases an eruption was observed, after attention had been drawn to it, as a symptom of the disease, although exanthematous eruptions, unless very pronounced, are not readily detected on the swarthy skin of the Indian. On the face it was generally observed as a diffused redness; on the trunk, thighs, and arms it presented a morbillous appearance—dark red, somewhat crescentic patches, about two to four lines in diameter, enclosing patches of healthy skin; on the legs, below the knee, it was generally, although not always, diffused—presenting the characters of erythema. The redness disappeared on pressure. In bad cases petechiæ were seen along with the eruption. Phlyctænæ, bullæ, and desquamation were the usual sequelæ of the eruption. If ulcerations occurred they were doubtless accidental.

Unfortunately, although the anatomical characters of the eruption were carefully observed, it has not been accurately determined at what precise period of the disease it occurred, nor how long it lasted. We think, however, that it generally appeared about a week after the œdema, and continued for about ten or twelve days. This is a point requiring further investigation, should the opportunity again occur.

Pain was always complained of in some part of the body. Most generally it was referred to the lower extremities. The pain was variously described as burning, shooting, or simply as a heavy sensation, deeply seated in the bones. Some patients complained of pains over the whole body—in the neck, lumbar region, and upper and lower extremities, while in others it was located in the joints of the feet. These pains, whether muscular or osseous, were frequently severe, if we are to judge by the complaints of the patients. This symptom usually began simultaneously with the anasarca, and disappeared after a week or ten days.

Epigastric pain of a more or less paroxysmal character was an almost constant symptom, and was associated with tenderness on pressure. Pain in the hypochondria and the abdomen was less frequently observed.

Dyspnœa.—A certain degree of breathlessness was not uncommon, but severe dyspnœa, paroxysmal in character, was only observed when there was exudation into the pericardium or pleuræ, or when the lung was œdematous, and was doubtless dependent upon these conditions.

Fever.—We have no thermometrical observations of the temperature at the commencement of the disease. Many patients said that they experienced rigors, followed by heat of the skin, but this mode of commencement was certainly not constant, and it is very doubtful if it was not rather the exception than the rule, and very probably occurred in those suffering from chronic malarial poisoning, in whom the outbreak of any disease may be sufficient to determine aguish symptoms.

After the disease was established and the patients came under observation the temperature was generally found to be about 37°·2 to 37°·4 in the morning, rising to 37°·6 or 37°·8 in the evening; but occasionally it rose to 37°·6 in the morning and 38°·2 or even a little higher, in the evening. These temperatures seem to indicate a mild febrile state. We are inclined to admit that acute anæmic dropsy is to be looked upon as a febrile disease.

Sudden rises of temperature to 39° or 40° occurred in some instances, but these rises were temporary, were subdued by quinine, and, so far as we are aware, were only observed in patients who had already suffered from malarial fever.

In a fatal case observed by Dr Pellereau a rise of temperature coincided with a rapid increase of the dropsy, a sudden development of dyspnœa, and signs of cardiac complication. The fever in this case was of an irregular intermittent or remittent type. Such instances must not be regarded as representing the normal temperature-range of the malady, but rather as significant of an intercurrent complication in a patient saturated with the malarial poison.

Condition of the Blood.—Anæmia was an essential feature of the disease. The visible mucous membranes were uniformly pale, and the skin often of a pallid, earthy hue. When a drop of blood was taken and placed upon a glass for examination, it was evidently watery and pale, and the colouring matter separated from the serum and appeared as a speck of brick-dust dropped into a serous fluid. Under the microscope the red blood cells were found to be very much diminished (*oligocythemia rubra*); they did not form rouleaux, but became massed together irregularly in little heaps. There was always an increase of leucocytes with irregular masses of germinal masses and a vast number of minute, highly-refracting granules—probably germs or spores.

The albumen was diminished (*hypalbuminosis*), and it may be inferred from this fact that the inorganic salts were increased according to Schmidt's law.

The Lymphatic glands were not enlarged, painful, or otherwise visibly affected. Many of the patients having been long in the colony had enlarged spleens, as a matter of course; but it is remarkable that little complaint was made of pain in the region of the spleen.

The urine was seldom albuminous; sometimes a very slight cloud might be observed on heating, but albumen in noticeable proportions was never met with. The urine varied so much in respect to colour and quantity that no general rule can be established.

POST-MORTEM APPEARANCES.

As the disease was by no means a fatal one when properly treated, comparatively few patients died in the public hospitals, on which account only a few autopsies have been made. It cannot be said, therefore, that this part of the subject has been thoroughly investigated. The following conditions have been noted:—

The skin eruption disappears after death; but where petechiæ or bullæ have been observed during life they will, of course, be visible. The phlyctænæ have been found to contain a reddish-coloured serum. The connective tissue is generally found to contain serum; but in some instances the anasarca seems to disappear before death.

On incising the skin irregularly diffused subcutaneous extravasations of blood have been observed. The muscles are pale.

The pericardium usually contains from two to ten ounces of fluid. The heart is pale and flabby, its cavities in some instances empty, in others containing a moderate quantity of dark semi-fluid blood.

The pleuræ contain more or less serum, and the lungs are in most instances œdematous.

The liver is frequently found to be somewhat enlarged and softened, and in one instance it was ascertained to be fatty.

The spleen has been found normal, enlarged, and atrophied; in respect to consistence it has been found healthy, but it has also been observed to be softened. In one case it is reported to have presented the colour and consistence of anchovy paste.

Most diversity is to be found in respect to the condition of the brain and its membranes. We believe, however, that as a rule they are healthy, although in some cases the cerebral substance is found to be œdematous and the ventricles to contain a considerable quantity of sero-sanguinolent fluid.

In the only instance in which the spinal canal was examined the membranes are said to have been congested, and the lumbar enlargement softened, but not hyperæmic. In one instance the medullary substance of the tibia was examined and found softened and red, and by comparison with the medulla in subjects dying from other diseases it was satisfactorily proved to be diseased.

The digestive tract is not materially involved.[1]

ETIOLOGY.

Predisposing Causes.

Race.—The disease, as has already been stated, was almost entirely confined to the Indian population, especially in the country districts; and amongst the Indians, it was remarked that those from Calcutta were more liable to be affected than those from Madras. Europeans were entirely exempt from the malady.

In the town of Port Louis the general population did not entirely escape, as will be seen from the following table prepared by Dr Beaugeard, showing the number of those who applied for advice at the Central Dispensary, and distinguishing between the general and the Indian population:—

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[1] The following are the symptoms of the disease as observed in India, according to Dr M'Leod—

(*a.*) Swelling of the limbs—the lower always, sometimes the upper, and occasionally the body.

(*b.*) Fever sometimes before and sometimes after the swelling, and in some cases altogether absent.

(*c.*) Bowel complaint in many cases—diarrhœa most commonly, dysentery in a few.

(*d.*) Burning and pain in the affected limbs at the commencement.

(*e.*) Shortness of breathing and cough, and palpitation in all cases.

(*f.*) Great emaciation, exhaustion, and anæmia in severe cases, slighter but well marked in all.

(*g.*) The duration of the disease appears to be about two months in cases of average severity, but it leaves its victim greatly enfeebled.

(*h.*) In fatal cases great disturbance of respiration and circulation have been described, and death has generally been sudden.

Return of Cases of Acute Dropsy from the 1st of January to the 31st March 1879.

	General Population.		Indian Population.		TOTAL.	
	M.	F	M.	F.	M.	F.
Receiving room......	11	2	62	20	73	22
Medical Advice......	7	9	6	8	13	17
Domiciliary visits...	1	8	3	1	4	9
Total of each...	19	19	71	29	90	48

This incidence of the disease on a particular race was one of the most remarkable features of the epidemic, and doubtless depended on circumstances connected with the occupations, habits, sanitary conditions, or food of the Indian population.

Occupation.—The majority of the Indians are engaged as labourers on the sugar estates. This class no doubt suffered severely from the disease, which broke out in almost every camp; but it has not been shown that they suffered more than their compatriots occupied in cultivating their own gardens, engaged in business, or employed as messengers, servants, or policemen. That overwork or exposure may have concurred with other agencies in predisposing to the disease may be inferred from the fact that women and children were less liable to be affected than men.

Habits.—The Indian, whether engaged as a labourer or otherwise, manifests a marked preference for camp life. His social instincts are gregarious. It is observed that those who are not engaged on estates, and who are thus free to live as they choose, voluntarily congregate in camps, consisting of little huts closely huddled together, often overcrowded and dirty. In this way the Indians in the colony may be said to live apart from the rest of the community, leading an exclusive social life of their own.

Although the insanitary state of the camps cannot be accepted as an explanation of the development of an altogether exceptional disease, its spread among a population so circumstanced can easily be understood, while the habits of the people, at once gregarious and exclusive, may have tended to promote its spread amongst themselves, and limited its diffusion among other sections of the community.

Food.—The food of the Indians consists almost entirely of rice, with the addition of dholl, green brêdes, and salt fish; and this is seldom varied. This diet is of low nutritive value, being deficient in albuminous matters. Although adequate for the ordinary physiological demands of the system, it is incapable of developing a reserve of resistance to debilitating diseases. That such a diet is not in-compatible with health is evident, for whole nations live upon it, and an important part of the world's work is done upon a diet consisting chiefly of rice. But just as the highly nitrogenized food of the Englishman renders him peculiarly liable to that class of diseases which depends upon plethora, so a diet deficient in albuminous matters undoubtedly predisposes to anæmia.[1]

Age and Sex.—Infants at the breast were seldom attacked; children under puberty and women were less liable to the disease than men. The liability of males was about twice that of females. This, however, applies only to adults, for no difference as regards sex was observed in children.

Climate and Season seemed to have no influence upon its spread or mortality. It began in a district which is reputed to be healthy and free from malaria, and it afterwards spread to the unhealthy districts, but did not appear to be either more common or more fatal in the latter than in the former.

It first appeared in the healthy season, after a long drought;

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[1] (*a*.) It has attacked houses in a village in a promiscuous way. The affected homesteads are mostly scattered throughout the locality, and not necessarily contiguous.

(*b*.) The rule has been that several or all the members of a household have been seized, and single cases in a family are exceptional.

(*c*.) Such seizures have taken place almost simultaneously or in rapid succession, as if from the operation of a common cause.

(*d*.) Similarly, as I have already remarked, the seizure of different houses in a village appears to have been simultaneous; indeed, the disease seems to have broken out all over the infected area about the same time.

(*e*.) Recent cases are rare, and, according to the latest information I have gathered, the disease would seem to be dying out.

(*f*.) Though it is most prevalent among the poorer classes of Mohammedans and Hindus, it is by no means confined to these. Eurasians, Armenians, and natives in good circumstances have also suffered.

(*g*.) I cannot attribute it to poverty of living, high price of food, or any dietetic condition or consequent constitutional taint. Well-fed Mohammedan butchers, accustomed to generous living and in excellent bodily condition, have been seized; and although I have observed indications of anæmia and scurvy in some cases, I am inclined to consider them secondary conditions due to the disease, and not the cause of it.

(*h*.) Nor have I observed any special insanitary conditions associated with its prevalence. The sanitary conditions of the households and villages in which the disease has broken out are certainly no worse than those of hundreds of others in town and suburbs, where no disease has prevailed. In short, I have been unable to fix upon any one condition or assemblage of conditions, personal or otherwise, peculiar to the affected places.

(*i*.) As regards infectiousness, the evidence is very conflicting. Dr O'Brien considers the disease to be very infectious, and gives good reasons for his belief. Facts have come to my knowledge which favour the impression that the disease is communicable, while others have opposed that view. If it is infectious (and I am not prepared to deny this), it is so under conditions, seasonal and otherwise, which strongly modify its manner of transfer from man to man. The gradual spread northwards, the pronounced localization, and the seizure of whole families, are the most remarkable circumstances in the natural history of the malady considered from an epidemological point of view.—*Dr M'Leod.*

but the change of season and the supervention of the rains did not stay its progress or modify its character. In fact, it commenced under one set of climatic conditions, and spread and continued through another.

Determining Cause.—Of the determining or exciting cause of this disease we know nothing. We may assume, indeed, that a disease so distinctive and peculiar was due to some specific cause. We cannot admit that any common meteorological conditions—extreme heat, variations in temperature, or droughts—could have given rise to this epidemic.

It has been supposed by some that this disease was due to malaria, but it seems to us that there are strong objections to this theory. Those who hold that the dropsy was only a new manifestation of that protean malady do not explain why the disease was never known in Mauritius during the previous eleven years, in which malaria has been so fatal, nor why it has now died out. They do not explain why it appeared in a district which was least likely to form the starting-point of a hitherto unknown form of malarial poisoning, nor why the malarial cachexia should suddenly declare itself in those who had never suffered from fever or exhibited any symptoms of that malady. Its epidemic spread, its restriction to a race, the suddenness of its attack, the comparative shortness of its course, leaving the patient in perfect health, all militate against the view that it was only an acute form of malarial cachexia. Then there was the skin eruption, which has never been seen in Mauritius or elsewhere, so far as we know, as a result of malaria. Such considerations, and others that could be urged, lead us unhesitatingly to reject the theory that the disease was an acute malarial cachexia, even if we were prepared to admit that any *cachexia* could be *acute.*

Mode of Propagation.—It was observed that when one member of a household took the disease, some of the others almost invariably became affected within a few days. In the same way, when it appeared in a camp, it rarely remained confined to the house in which it broke out, but subsequently spread more or less extensively throughout the neighbouring huts. In a few instances it was observed to break out in a locality shortly after the arrival of some person suffering from the disease. On the other hand, the attendants on the sick in hospitals rarely contracted the disease. These may be said to be all the facts positively known regarding the spread of the disease.

Some, judging from the way in which it spread when introduced into a house or locality, regarded it as contagious, but the great majority of practitioners in Mauritius adopted at first the opposite view.

The disease was certainly not infectious or contagious in the sense that small-pox, measles, or scarlet fever are contagious; but the ways in which a poison may be diffused and transported are so innumerable and so little understood, that the mere fact that it seldom spread in well-ventilated hospitals cannot be accepted as conclusive evidence of its non-communicability in presence of the evidence we now possess that it was introduced from India, and the circumstances connected with its spread in Mauritius.

Mortality.—As a rule, those who succumbed to acute anæmic dropsy were the old, the weak, and the cachectic. In one series of 20 cases we find that five proved fatal; and in another series, out of 96 patients, 8 died; but it must be borne in the mind that the milder cases never came under treatment or observation. The average mortality certainly did not exceed 2 or 3 per cent.

The total mortality during the epidemic amounted to 729. It thus appears that the disease, although not a fatal one, carried off a large number of victims from its wide diffusion.

NATURE OF THE DISEASE.

The dropsy so characteristic of this affection was evidently the result of the accompanying anæmia, for none of the other pathological conditions known to induce anasarca were present. When the albumen in the blood is reduced below a certain proportion dropsy necessarily results, exhibiting itself in œdema of the feet and legs, and, in its severer forms, leading to effusions into the serous membranes, as was the case in this disease.

Assuming, then, that the dropsy resulted from anæmia, the question next arises, What was the cause of the anæmia? Anæmia, as we meet with it in our ordinary practice, is due either to one or more of the following causes, viz.:—(*a.*) Insufficient replacement of the tissue elements, which are continually undergoing change from defects in the quantity or quality of the food, or impairment of the digestive or assimilative processes. (*b.*) Accelerated metamorphosis or loss of tissue from overwork, extremes of temperature, excessive physiological or pathological discharges, and certain toxic agents. (c.) Impaired sanguification from chronic diseases of the cytogenic organs—spleen, lymphatic glands, medulla of the bones. It is in this way that malaria, by its action on the spleen, gives rise to anæmia. It will be seen that all these causes act slowly upon the constitution, and the anæmia so induced is either subacute or chronic.

Acute anæmia is practically unknown in Europe, excepting as a result of hæmorrhage, and before the advent of the late epidemic it was equally unknown in Mauritius. It is not improbable, however, that anæmia may be suddenly induced by certain miasmata, and that this condition underlies several obscure diseases endemic in certain parts of the East, among which may be included both the true beri-beri and the beri-beri of Rochard.

In speaking of these affections as anæmic, it is not implied that the anæmia is simple, involving merely an actual or relative diminution of certain of the constituents of the blood. On the contrary, the difference in the symptoms of beri-beri and acute anæmic dropsy seems to indicate that the blood changes in these affections are not only quantitative but qualitative, not *simple* but *specific*, and caused by different miasmata, using that word in its widest sense.

In acute anæmic dropsy the poison first manifested itself by its action on the sympathetic system. The vomiting and purging which ushered in the disease indicated vaso-motor paralysis affecting the abdominal viscera; when the morbid influence was more intense, fever was superadded. It was at this period that the anæmia appeared. Patients, as a rule, exhibited no signs of cachexia up to the period when the diarrhœa and vomiting commenced. Whether the morbid cause acted directly upon the blood, or indirectly through the blood glands, is not clear. We may be sure that the vomiting and diarrhœa did not *cause* the anæmia, but were simply concurrent symptoms.

Relation of Acute Anæmic Dropsy to Beri-beri.—There has in reality been less difference of opinion upon this point than may be supposed. Those members of the profession who inclined most to the view of their identity were the first to point out certain important differences between the disease witnessed here and that described by authors as beri-beri. On the other hand, those who maintained that the two diseases were essentially distinct admitted that they resembled each other in certain particulars.

The term beri-beri has unfortunately been very loosely defined, and authorities differ as to the essential symptoms of the disease. Dr Rochard confines the term to an acute dropsy without paralysis, while English authors without exception apply it to an acute disease, the leading features of which are anæmia, dropsy, numbness, and paralysis of motion and sensation.

Rochard describes a disease which was observed on board the French coolie ships "Le Parmentier," "L'Indien" and the "Jacques-Cœur" in 1862 and 1863. This disease appeared as an epidemic among the coolies on these three ships, and was carefully studied by the medical officers in charge; and it is from the notes of these officers that Rochard has compiled the description of beri-beri which appears in the *Nouveau Dictionnaire de Médecine et de Chirurgie.* As a description of the particular disease which appeared among the coolies on these vessels, Rochard's article is, no doubt, both full and accurate.

The first symptom in these epidemics was œdema in the lower extremities, spreading to the trunk, and finally involving the serous membranes. This dropsy was accompanied with dyspnœa and epigastric pain. As the effusion into the pleuræ and pericardium increased, the respiration became more and more embarrassed, until syncope or coma terminated the sufferings of the patient. The disease was not accompanied with fever; the urine became scanty and coloured as the disease advanced, but was not albuminous, and the bowels were obstinately constipated.

Rochard further maintains that this disease described by him is beri-beri — and *the only form* of the disease. He excludes paralysis entirely from the symptomatology of the malady. All previous writers having, as he supposes, confounded beri-beri with barbiers, he holds that the different forms of the disease described by them "ne reposent que sur des erreurs de diagnostic."

In this view of beri-beri Dr Rochard stands almost alone. Even Fonssagrives et Le Roy de Méricourt, who, according to Rochard, were the first to dissipate the confusion that had previously enveloped the disease, admitted paralysis as one of its symptoms.[1]

The symptoms of beri-beri as described by English observers are succinctly stated by Aitken as follows :—"Universal debility; extreme prostration; anxiety, dyspnœa, numbness, œdema, and paralysis." Aitken, like Rochard, Fonssagrives, and Le Roy de Méricourt, is a systematic writer, and, like them, he has probably never seen a case of the disease; but we quote him not as an original authority, but as a witness to the views of the leading English writers upon the point, and also because there is a general impression that Aitken admits a dropsical form of beri-beri not attended with paralysis. This is an error, for he distinctly mentions paralysis as a symptom common to the three forms he describes.

Mr Malcomson, who had abundant opportunities of studying the disease, states that, in sixty-five cases, "60 had more or less paralysis, and in the other 5 it had been prevented by the early use of remedies; in 1, almost the whole body was affected; and in some only a finger or two; 57 had numbness of the feet or hands; in a few, a spot only on different parts of the body was affected, and in others the head and breast were the only parts not benumbed; 48 had pain or soreness; 40 œdema; 33 spasms; 11 had the gait of the sheep; 12 tottering in walking; and 24 had sense of weight in limbs or thorax. There was a sense of coldness in the extremities in 5; of biting of ants in 3; in 10, sense of tingling; and in 4, of the feet being covered with clay."[2]

Mr Scott, the author of the article "Beri-beri" in the *Cyclopædia of Practical Medicine*, in criticising the term "Hydrops Asthmaticus" employed by Rogers for this disease, says, "This term conveys an imperfect notion of the pathology of the disease, a paralytic affection being perhaps a more constant symptom of beri-beri than dyspnœa and dropsical effusion." He adds,

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[1] Fonssagrives et Le Roy de Méricourt; "Beri-beri."—*Achiv. General*, XVIII. Sept. 1861.

[2] *A Practical Essay on Beri-beri.* By Assistant-Surgeon John Grant Malcomson. Madras, 1835.

"The *paralytic symptoms*, together with the dyspnœa and dropsical effusion, distinguish it (beri-beri) from every other disease." We think it unnecessary to quote further, but we may simply say that Ridley, Hamilton, Christie, Dick, Hunter, Patterson, Colquhoun, Morehead, and Oudenhoven,[1] all of whom had studied in the East, give dropsy, paralysis, and dyspnœa as the leading symptoms of beri-beri.

If we accept these as the symptoms of beri-beri it will be at once admitted that the epidemic dropsy which prevailed in Mauritius last year is an entirely different disease. Dropsy and anæmia are common to both, and in both the anæmia is acute; but here the resemblance ceases. Paralysis was never seen in acute anæmic dropsy. Even granting that cases of beri-beri occur in which this symptom is absent (and this is a point on which authorities are not agreed), it is difficult to admit that a symptom so distinctive of the disease should never have been once observed among so many thousands of patients, if the dropsy had been really only another form of beri-beri.

The beri-beri of Rochard is characterized by anæmia and dropsy suddenly developed, and in these respects it resembles not only the epidemic under consideration, but also the beri-beri of English authors. Rochard's beri-beri is described as epidemic, but less importance has to be attached to this, inasmuch as a disease may affect simultaneously large numbers of men all living on board ship, under precisely the same conditions, that would not have spread as an epidemic on shore.

In every other particular the beri-beri of Rochard differs from acute anæmic dropsy. Rochard's disease was a fatal one (35 to 50 per cent. of those attacked dying); it was neither accompanied by fever nor presented a skin eruption, but was attended with obstinate constipation and distressing dyspnœa.

Acute anæmic dropsy as observed in Mauritius was comparatively free from danger, and in this respect differed widely from beri-beri in all its forms. The circumstances under which the disease described by Rochard occurred doubtless increased its fatality, although to what extent it is of course impossible to say. We can hardly be wrong, however, in regarding it as an essentially fatal disease apart from all aggravating conditions. It ran a rapid course, and often proved fatal within a few days, or even hours. We know that the mortality of the true beri-beri varies also from 14 to 36 per cent. of those attacked. The difference indicates the influence of hygienic conditions upon the mortality of the disease; and it may be permissible to infer that the mortality in Rochard's beri-beri would vary in somewhat similar proportions according to the circumstances in which it appears; but it is hard to believe that the difference between 2 per cent. mortality of acute anæmic dropsy and the 50 per cent.

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[1] *Schmidt's Jahrb.*, vol. 150, p. 308.

of beri-beri indicates the difference between the sanitary condition of an Indian camp in Mauritius and that of a French coolie ship. The difference in the fatality of the two affections is, in fact, so great that this alone would justify the conclusion that they are essentially distinct.

A no less important distinction is founded upon the fact that the one is a pyretic disease and the other not. It may be also observed that the extension of the dropsy to the serous membranes was accompanied with a marked increase of fever in the case of our epidemic, a circumstance not recorded in connexion with beri-beri. It might, indeed, be urged that the febrile character was impressed upon acute anæmic dropsy by endemic influences, but the fact that a certain rise in temperature attended the disease when it appeared in subjects who had never suffered from malarial fever justifies us in regarding acute anæmic dropsy as a febrile disease.

The way in which a disease commences is often very distinctive. The catarrhal symptoms which precede the outbreak of measles, the lumbar pains and vomiting which announce the advent of smallpox, the intense headache and circum-orbital pain premonitory of the appearance of yellow fever, are almost as characteristic as the symptoms of these diseases when fully developed In this way we are inclined to attach considerable diagnostic significance to the prodromic vomiting and diarrhœa so constant in anæmic dropsy, but which are never seen in beri-beri.

Whether the skin eruption is to be regarded as a true exanthem may perhaps be open to doubt. It certainly presented many of the characters of a specific rash. We only express a doubt because we are aware that anomalous erythematous eruptions, as well as bullæ and petechiæ, have been noticed in various diseases, such as camp diarrhœa (diarrhœa bellica of Frank).[1] The rash of acute dropsy was, however, so constant and so definite that we incline to regard it as an essential symptom of the malady. Be that as it may, it is a symptom that has never been described as occurring in beri-beri, and forms an important distinction between that disease and the one we are now considering.

We have only to add that a careful consideration of the whole subject has led us to the conclusion that acute anæmic dropsy is a disease *sui generis;* not due to malaria; and not identical with beri-beri; and that it was first observed and described by those gentlemen whose monographs upon the subject form the basis of this paper.

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[1] "Chez plusieurs les pieds enflaient, la face dorsale se couvrait de phlyctènes qui se remplissaient de matière jaunâtre ou roussâtre. . . . Chez d'autres se manifestaient des érysipèles ou des phlegmons à la face et aux bras—un certain nombre offrait des pétéchies sur le corps. . . . Quelquefois, la diarrhée cessant survenait une hydropisie ou une anasarque."—Frank, vol. vi. p. 240.

ARTICLE V.—*Carbolic Acid Poisoning* (Surgical). By S. RUTHERFORD MACPHAIL, M.B. Edin., Liverpool. Late Resident Medical Officer, Greenock Infirmary and Fever Hospital.

CARBOLIC acid poisoning, the subject of the following paper, is really a side issue on a main subject. Therefore it is that, in introducing it, one finds it impossible to avoid some reference to the antiseptic treatment in general, and especially the modification of it with which the name of Professor Lister is so justly associated.

At the outset I think it is necessary to state distinctly that the Listerian method of surgical treatment does not resolve itself into the mere employment of any reagent such as carbolic acid. The germ theory of putrefaction, on which antiseptic surgery is based, assumes, as proved by the researches of Pasteur and others, "that putrefaction does not occur except in the presence of organisms, notably bacteria; that it is produced by their agency; that they are always derived from similar organisms, and, when implanted in a suitable soil, will multiply indefinitely." Now we know that there are certain germicide agencies, of which carbolic acid, though the chief, is only one of a series, that absolutely put a stop to the development and reproduction of these germs, and coincident with this arrest the unhealthy action of the wound either disappears if it has already occurred, or, on the other hand, may be entirely prevented from taking place. To put this in other words, antiseptic surgery aims at completely arresting the development of putrefaction. Although the protection which antiseptics give cannot claim to prevent suppuration in any absolute sense, it avoids the most common cause of its occurrence by excluding the septic atmosphere. There is a form of suppuration which is set up by other causes, such as inflammation, or irritation of the wound in any way, and over this it is perfectly powerless. Indeed, irritation by means of the antiseptic material used is itself sufficient to cause it when applied in too strong a solution, or too directly or constantly, to the wound surface. To any one who has worked much with carbolic acid, the antiseptic reagent we are specially dealing with in this paper, its irritating properties must be abundantly evident without special proof.

As I take it, the Listerian method of antiseptics, while aiming at perfection, still finds itself much in need of a material to which no objection can be taken. In other words, a non-poisonous, non-irritating substance, possessing at the same time the advantages of carbolic acid, in our antiseptic dressings, is still a desideratum. With our present knowledge we must use carbolic acid spray and gauze, recognising that, though as antiseptics they are all that can be desired, they are yet possessed of powers for evil as well as for good; and if we wish to make a judicious employment of them, we

must strive to limit the former, while not interfering with the efficacy of the latter.

The substitution of absolute phenol for the ordinary commercial or crude carbolic acid has in a slight measure lessened the irritating effects noticeable in the earlier applications of carbolic acid in surgical dressings. The explanation of this is, that the latter contained a homologous substance called cressol, which, while possessing antiseptic properties in a small degree, was likewise a most powerful irritant.

At the outset of a case treated antiseptically there is not so much danger in using an excess of carbolic acid, for at this stage the hyperæmia so caused is rather an advantage, as it tends to promote primary union. It is in the subsequent treatment that the direct contact of the carbolic fluid must as far as possible be avoided, for it must be remembered that a very weak solution is sufficient to keep a wound once thoroughly aseptic free from suppuration. The most favourite of the practices indulged in by those whose zeal is greater than their knowledge consists in the frequent dressings and syringings of the wound, or "thoroughly keeping the limb in pickle," as I heard one of the class I refer to term it. Great surprise is shown when suppuration and probably pyæmia are induced by following out this course, and a reproach is cast on the antiseptic system. They forget altogether that the practice implies a theory, and that this over-zeal in the use of the means is the cause of the hyperæmia and suppuration, the very things the theory seeks to avoid. Especially, I think, is the daily syringing of the wound to be deprecated so long as it remains aseptic, for it completely prevents one of the greatest triumphs of the antiseptic system, viz., the asuppurative organization and cicatrization of the blood-clot. Besides, it complicates the treatment of the case by setting up what Professor Lister has termed "antiseptic suppuration," thus rendering the perfect drainage of the wound more difficult. It means, in fact, converting the primary and preventive use of the drainage-tube in antiseptic surgery into the secondary drains for which they were originally intended by Chassaignac, who introduced them into practice for the escape of matter already formed in a wound.

But it is with another consequence of the use of carbolic acid that I am chiefly concerned. I refer to intoxication or poisoning from carbolic acid dressings. The literature on this subject, considering its importance, is very meagre, and comes chiefly from the pen of German authors, notably Dr Küster of Berlin. Even German writers are not agreed among themselves as to the real character of the cases that have been described. In a letter I lately received from Mr Lister on this subject, he tells me that Dr Maas of Freiburg suspects, from the fact that a high temperature occurred in the cases, that what was set down as carbolic poisoning was in reality, in a good many of the cases, septicæmia. To use antiseptic treatment does not ensure exemption from septic blood-poisoning. But, going on the assumption that the use of antiseptic reagents gives immunity from septicæmia, one is apt to attribute dangerous symptoms to some other cause, and the favourites are carbolic poisoning and fatty embolism. At the discussion on antiseptics by the Metropolitan Counties Branch of the British Medical Association, Mr Macnamara made some interesting observations on the subject of septic blood-poisoning. While admitting that pyæmia and septicæmia sometimes went hand in hand, he thought that they had not necessarily any relation with one another, for septicæmia depends on changes in the blood which sometimes occur independently of the atmosphere. Therefore a proportion of such dangerous symptoms occurring in the course of the antiseptic treatment may be eliminated, for he says, "Similar symptoms occur, for instance, from a person receiving a blow on the head with no external injury, but septicæmia is set up in consequence of injury to the dura mater or to the inner table of the skull." We must, then, carefully discriminate between such cases and those in which the use of carbolic acid is to blame.

In a certain small percentage of hospital antiseptic cases, without any assignable cause, there occurs a rise of temperature—as much as 3 or 4 degrees Fahrenheit—due to what Volkmann calls "aseptic fever." Here, with a temperature over 100°, there is no other manifestation of constitutional disturbance; the patient is doing well, and the progress and aseptic condition of the wound are not interfered with. This is probably a toxic effect of carbolic acid, and may be classed under the minor degrees of the affection we are considering.

Again, mere darkness of the urine as the result of carbolic acid, though undoubtedly a warning to the surgeon to be on his guard, is in itself a matter of no moment. I have seen more than one case progress favourably to convalescence with dark, smoky urine; but no other symptom having supervened, the changing of the dressings and the substitution of some other material was not necessitated.

The use of dressings containing carbolic acid sometimes produces a form of eczema or erythema from their continued application, the effect being produced on some in a much shorter time than on others, owing to the special susceptibility or delicacy of the skin of the individual. Here, however, the condition is aggravated, if it is not caused, by the crude paraffin contained in the gauze, so it is quite possible that carbolic acid is only partly responsible for this form of irritation.

In what class of cases is it that carbolic poisoning has been reported to have occurred? Is it in the treatment of ovariotomy, where the operation is often protracted for hours, or in empyema, where the pleural lining membrane is exposed to such a chance of irritation as is the peritoneum in ovariotomy? No; I do not think there is a single case reported where symptoms of poisoning occurred, unless in a very trifling degree, in either of these two very likely classes. On the other hand, its occurrence is most common in any large recent wound, and more especially in large abscess cavities. Professor Lister, in a lecture of his published in the *Lancet* (20th December 1879), explains the reason. He says, "I believe the secret of our immunity from these toxic effects is that we avoid as much as possible all unnecessary action of the carbolic acid upon the tissues." The case he was speaking of was a child of three years old, in which he treated an empyema antiseptically, and he gives it as his opinion that if he had injected carbolic fluid into this patient's pleural cavity, and especially if he had done so at each subsequent dressing, there would in all probability have been carbolic acid poisoning. The reason why the most likely cases are exempt, while others not nearly so favourably situated for the manifestation of these symptoms have them in their entirety, is to be sought for in one and the same cause, viz., the unnecessary application of carbolic acid to the system; and to the avoidance of this kind of practice the best surgeons, in this country, at all events, owe their comparative immunity from carbolic acid poisoning.

I have the personal authority of Mr Lister for saying that in his hospital and private practice he has only had one case in which he could attribute dangerous symptoms to the use of carbolic acid. Here general debility and derangement of the digestive system, in addition to the peculiar dark-green coloration of the urine found in such cases, were the result of a course of carbolic treatment by the usual antiseptic form of dressings after an operation. These symptoms immediately disappeared on changing the gauze dressing to one of boracic acid, but only to return again when recourse was had to the carbolic acid and spray as before.

Now I think, with this high authority on the subject before me, I may draw the inference that this toxic effect from the external application of carbolic acid in surgical dressings may occur in a certain small percentage of cases even under the best management. As certainly, however, can it be pointed out that it is the result of a rare idiosyncrasy in those affected, provided we endeavour to eliminate those sources of fallacy I have sought to indicate. Therefore is it that we must not shut our eyes to the fact that this class of case does exist; and it is as a contribution to elucidate this part of the subject that I have been induced to write this paper.

For one of the most interesting cases of idiosyncrasy I know of I am indebted to my friend Dr Whiteford of Greenock, which shows the peculiar susceptibility to the influence of carbolic acid the members of some families possess, and also the small quantity which will sometimes suffice to excite symptoms of poisoning. Two children of one family came under his care suffering from ringworm of the scalp. The treatment adopted in either case was a 2½ per cent. solution of carbolic acid applied to the affected surface in the form of water dressing. In both symptoms of carbolic poisoning occurred, in the one case exceedingly severe and coming on very shortly after the initial application, while in the other the symptoms were delayed for two days and were altogether less severe. Removal of the exciting cause removed all the toxic symptoms in both cases. To satisfy his mind that the acid was really at fault, and that the symptoms were not merely a coincidence, he repeated the experiment twice in each case—once to the scalp as before, and on the other occasion to another part of the body—with the invariable result of bringing back the urinary and gastric disturbances and the other symptoms of carbolic irritation. In none of these applications did the size of the portion of the integument in contact with the acid exceed that of a crown-piece.

My own experience of such cases also points to a rare individuality in those persons who manifest dangerous symptoms, and to this class belong the two special cases upon which my experience is based. At the same time, I may state that I have also seen an undoubted case where identical symptoms were induced by the forcible and daily injection of carbolic acid into an abscess cavity, and a clear case of this latter kind is related by Nussbaum of Munich in his recent work on antiseptics.[1]

Both of my cases occurred in women after operation, thus supporting the statement of Mr MacCormac that women are more liable to the noxious influences than are males. However that may be, I can speak positively as to the minor degrees of carbolic poisoning—*e.g.*, eczema and erythema—being equally common among men.

I am indebted for permission to publish the following details to the kindness of Dr Paton, under whose care the patients were.

CASE I.—Jessie D., a strong, healthy married woman, 30 years of age, was admitted to the surgical wards of Greenock Infirmary on 7th May 1880.

Without going into any unnecessary details about the case, it may be stated that, on the advice of her medical attendant, this patient came to hospital to submit to an operation for the removal of a large tumour, situated over the upper portion of the left scapula. This she had originally noticed some six or seven years ago, but only in the last two years had it assumed anything like its present dimensions. The size at the time of her admission was that of a large cocoa-nut, and from the lobulated form and soft consistence of the tumour there was no difficulty in arriving at the diagnosis of a fatty tumour. The general health of the patient was excellent, and she herself was anxious for the operation, more because of the annoyance which the tumour caused when she did any work than on account of her experiencing special pain or any other bad effect from its presence.

The operation for excising the tumour was performed on 10th

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[1] *Leitfaden zur Antiseptischen Wundbehandlung*, p. 141.

May, and, as was anticipated, it was found to be a large lipoma. The operation itself calls for no special comment. The usual antiseptic precautions were used, and the tumour was removed by an elliptiform incision and some dissection of its attachments, which, however, were not numerous. Only one small vessel required to be ligatured. The only peculiarities in the dressings were that horse-hair sutures and a drain of the same material were used, while, instead of the usual protective over the line of incision, gauze steeped in absolute phenol and glycerine (1 in 10) was employed. There was neither syringing nor excessive ablution of the exposed surfaces. The patient passed a very good day, experiencing neither nausea nor vomiting from the anæsthetic (*ethidene dichloride*). In the evening the temperature was 99°·6 and the pulse 86.

11th May.—Dressed. No irritation of the wound, and no appearance of tension. Temperature, 100°·4; pulse, 72. Towards evening patient complained of nausea, and vomited twice. Felt general malaise, but no pain. Complete loathing of food, although she took her breakfast with some appetite. Temp., 102°·4; pulse, 86. Ordered 15 grains of salicine, to be taken every three hours.

12th.—Passed a restless night, and the vomiting continues, it being now quite of a bilious type. Temp., 100° and 103°; pulse, 72 and 84. Salicine continued, and a mixture containing hydrocyanic acid prescribed, with the object of controlling the vomiting. Patient menstruating.

13th.—Still very feverish, and vomiting not checked, though hardly so persistent. Temp., 102°·4; pulse, 90. Dressings taken down and wound redressed, but nothing found to account for the high temperature, save some irritation and a slight blush about the line of incision. Dressed as formerly, but an ordinary caoutchouc drainage-tube was used to replace the horse-hair drain, and a piece of protective was applied over the wound, to see whether the dressings could possibly be at fault. Evening temp. and pulse, 105° and 92. Sulphate of quinine in 10 grain doses was ordered to replace the salicine powders.

14th.—There is no discomfort over site of operation, but the general malaise, giddiness, and sickness continue, though the vomiting has ceased. Temp., 101° and 103°·2; and pulse, 78 and 84. The symptoms were further complicated this morning by the occurrence of profuse salivation. The urine was also examined. The quantity seemed diminished, and in colour it was of a dark olive green tint, the darkness becoming intensified after it had stood for some time. The chloride of barium test showed that the normal quantity of sulphates was not present, and the addition of some strong sulphuric acid to a portion of the urine in a test-tube caused a dark brown line of coloration where the two layers of fluid came into contact. Smelling the liquid also gave a distinct indication of carbolic acid.

15th.—Temp., 101°·4 and 102°·4; pulse, 72 and 70. Symptoms remain unaltered, but patient is more collapsed. There are, in addition, some visual disturbance with noises in the head and a great amount of stupor. A tablespoonful of brandy every three hours ordered in addition to the previous treatment.

16th.—Dressed this morning. The wound looks perfectly healthy, but little or no progress has been made since the last dressing, while the edges of the operation wound and the surrounding parts bear marks of irritation by the carbolic acid. The discharge is slight, but perfectly free from putrefaction. Temp., 101°·8; pulse, 70. Other symptoms continue, and patient is evidently in a critical condition, without there being any general cause, such as peritonitis, to account for it. The further use of carbolic acid in any form in the dressings was discontinued, boracic acid and salicylic wool being substituted. All medicine stopped, but stimulation with brandy continued. Night temp. and pulse 102°·6 and 72.

17th.—Patient much better in every way. Temp., 100° and 101°·2; pulse, 68 and 70. The quantity of urine has increased, but there is still some dark olive discoloration, though not so intense as formerly.

The subsequent history of the patient, both in regard to the progress of the wound and the constitutional symptoms under the daily dressings with boracic acid, was an uninterrupted recovery. The temperature gradually returned to normal, and the appetite daily improved from the moment the carbolic dressings were removed, while there was no recurrence of any of the previous anxious symptoms. She was finally discharged cured on 6th June 1880.

Remarks.—This case is very analogous to one occurring in the practice of Mr John Wood of King's College Hospital, and which I find referred to by him in the *British Medical Journal* for 20th December 1879. In this case a high temperature and distressing symptoms similar to those which I have described were completely checked by the withdrawal of the carbolic dressings.

I think we have here undoubtedly a case of idiosyncrasy, though doubtless some will consider the modifications of the usual Listerian dressings which we used as open to criticism. Such, however, is not my opinion, for, in an extensive use of glycerine and phenol applied as a dressing to various classes of wounds, I have found it to be the least irritating form in which it is possible to employ carbolic acid. As to the horse-hair drains I cannot speak so favourably, though in this case they certainly did no harm. I think they should be used very occasionally, and the only advantageous use I have ever seen this form of drainage put to is to insert a bundle of about a dozen hairs inside one of the decalcified bone drains invented by Dr Neuber of Kiel, to prevent its becoming blocked in the first few hours. This, of course, would only be necessary when a considerable amount of discharge was present, or, at all events, anticipated. The difficulty of discriminating between the toxic effects of carbolic acid and the vomiting, depression, and other symptoms due to the anæsthetic, especially if these come on late, is a very real one. In the case under consideration, for example, the condition of the patient during the first manifestations of the untoward symptoms was considered due to the shock of operation and the probable effects of the anæsthetic, combined with the fact that she was menstruating at the time.

As to the condition of the urine and its peculiar coloration, the only theory I have seen adduced is that "the appearance is probably due to the colouring matter in the blood escaping in the shape of an increased amount of indican." Carbolic acid is quickly eliminated from the kidneys, and in some of the fatal cases it has been found to have done so at the expense of a great deal of irritation and congestion in that organ. The theory that in cases of carbolic acid poisoning the urine ceases to contain sulphates is brought forward by Vulpius in the *Pharm. Zeitung*, 5th March 1879; and it is to demonstrate their absence that he advises the chloride of barium test to be used in suspected cases. The sulphuric acid test is the ordinary one; while discriminating the presence of carbolic acid in the urine by the sense of smell, though too great stress should not be placed upon it, was still in this instance unmistakable.

The only other point I shall notice is the almost complete cessation of progress in the wound when it was dressed under the carbolic spray on the 6th day after operation (the second dressing). I have no hesitation in saying that the patient would have died collapsed had the carbolic treatment been persisted in much longer.

Since then I have had an opportunity of testing her great susceptibility to the local application of carbolic acid, for a sponge cloth dipped in a 5 per cent. solution, and wound round her arm for a couple of hours, caused a marked blush over the part, as also what she termed a "bilious feeling" and loss of appetite for that day.

CASE II.—Sarah B., a well-developed, healthy-looking servant girl, 19 years of age, was admitted to Greenock Infirmary on 11th December 1880, suffering from a large axillary abscess on the left side. The symptoms commenced four weeks prior to admission, dating from a supposed strain, and she had been for the most part of that time under our care as an out-patient. Various forms of treatment were adopted under the supposition that it was a case of synovitis of the shoulder-joint, but during the last three days the symptoms developed into those of a large fluctuating tumour occupying the costal border of the axilla, and accompanied by intense pain and feverishness. She was accordingly advised to come into hospital to have the abscess evacuated.

On the day of admission an incision was made into the tumour under antiseptic precautions, evacuting 12 ounces of laudable pus. The finger passed into the wound showed the abscess to extend far up into the axilla towards the shoulder-joint, and the clavicle could even be touched, while laterally it extended anteriorly for some inches beneath the pectoralis major, and posteriorly for a short distance under the fibres of the latissimus dorsi. The cavity was gently syringed with a 2½ per cent. solution of carbolic acid, a rubber drainage-tube was inserted, and the usual antiseptic dressings superimposed. She speedily recovered from the effects of the chloroform, and at night the temperature was 99°·8 and the pulse 80.

12th December.—Temp., 99° and 101°·2; pulse, 82 and 88. The wound, which was dressed to-day, is looking well, with a free discharge existing. The drainage-tube was shortened half an inch. Patient feels comfortable, and had a good night's rest.

13th.—Dressed again. There is a slight blush over the deltoid, but no bogginess or infiltration of the surrounding parts noted. Temp., 99° and 100°·8; pulse, 88 and 94.

14th.—Morning temp., 99°·8; pulse, 86. Patient looks slightly flushed, and complains of great nausea and inability to take food. There is some diarrhœa, with orange-coloured stools. Tongue foul, and. covered with thick white fur, tip and edges denuded of epithelium. Dressed again under spray. The incision wound presented no abnormal appearance. The temperature now began to rise, until at 8 P.M. it reached 104°·6; pulse 98, weak and irregular. The nausea had given place to vomiting, which distressed her very much. Face much flushed, eyes bright and restless, and patient extremely feverish. As she complained of inability to make water, a catheter was passed at 11 P.M., and 30 ounces of dark greenish-coloured urine drawn off. This was afterwards examined and found to have an acid reaction, and to give the tests for carbolic acid. Ordered powders every three hours containing 5 grains of sulphate of quinine and 15 grains of salicylate of soda.

15th.—Temperature has been fluctuating a good deal. At 5 A.M. it was 100°, at 9 A.M. 101°·4, and at 10.15 A.M. 102°·4; pulse, 94; small and feeble, but regular. Patient is still very feverish, with a slight amount of nervous excitement, and the symptoms of gastric irritation have not abated. On removing the dressings the edges of the wound were red and inflamed, and even the portions of the skin where only dry gauze was in contact were blistered and erythematous. Wherever any carbolic material had touched the skin, marks of irritation were present. The carbolic dressings were left off, and boracic acid and salicylic wool substituted, while the patient was ordered free stimulation with brandy. Evening temp., 102°·4; pulse, 86.

16th.—Temp. has fallen to 99°·4; pulse, 80. Patient expresses herself as feeling much better. No sickness or feverishness.

Wound looks well, and the erythematous blush is fast disappearing. Catheter again passed, and several ounces of urine drawn off. This was normal as to colour and smell, but gave the reactions of carbolic acid most distinctly. The further progress of this case was uneventful, for after the dressing had been changed to the milder form of antiseptic she made an uninterrupted recovery. The abscess cavity speedily closed in, and she was discharged cured on 4th January 1881.

Remarks.—This case only differs from the last in the degree ot severity of the symptoms, and this can be easily explained by the fact that the condition was recognised earlier in the course of the case, profiting by the lessons taught by its predecessor. I find some very analogous symptoms between this case and one related in the recent report of Mr Joseph Bell's surgical cases by Mr Maxwell Ross, *Edin. Med. Journal,* May 1881, where an early symptom was suppression of urine, necessitating the use of the catheter for four consecutive days. A slow pulse and a degree of nervous excitement were noticeable in both ; but in Mr Bell's case, instead of the symptoms taking a favourable turn after the carbolic dressings were discontinued, the nervous symptoms developed into delirium, and the temperature rose rapidly until death occurred in thirty-six hours.

Another case of carbolic poisoning I remember well as making a great impression on my mind when a student. Occurring as it did in a transitional stage of the surgical history of the Edinburgh Royal Infirmary, it naturally excited a good deal of comment at the time, and was, I believe, one of the earliest cases in which the possible deleterious consequences of the use of carbolic acid was recognised. The patient was in the wards of Mr Joseph Bell, who has kindly put at my disposal the leading details of the case with permission to utilize them.

This patient, a man of 42 years of age and of very dissipated habits, was transferred to Mr Bell's wards on .13th November 1874. He had already been an inmate of the hospital for two months. Originally admitted for delirium tremens, he had, in addition, passed through an attack of phlegmonous erysipelas, and he was sent to the surgical hospital to undergo treatment for some of the sequelæ of this attack in the shape of abscesses over the knee and ankle joints. From the notes I have before me it is evident that the erysipelatous seizure was a severe as well as a protracted one; for on several occasions the temperature exceeded 105° and the pulse 120, while there is mention made of rigors and wandering delirium several days after the erysipelas set in. A week before he came under Mr Bell's care, 6 oz. of pus were drawn off by aspiration from the abscess on right knee, but it speedily refilled.

On admission, incisions were made, under the spray, into the abscesses, evacuating 20 oz. of healthy pus from that over the knee-joint, and a much smaller quantity from the one lower down, situated a little distance above the ankle-joint. There was no special syringing out of the abscesses after evacuation, and certainly no hyperdistention of their cavities with carbolic fluid. They were simply plugged with lint steeped in carbolic oil (1 in 10), and the usual antiseptic dressings applied.

Vomiting and an intense dark green coloration of the urine were the prominent symptoms of the poisoning in this case, and were first remarked the second day after the carbolic acid came in contact with the tissues. But as regards the temperature and pulse it must be premised that some of the pyrexia after erysipelas still remained, and it would be difficult to say to which cause one ought to attribute the slight rise of temperature that did occur. At all events a high temperature was not specially remarked upon in this instance, as it lay in the difference between a night temperature of 102°·6 and 103°·4, and no record was kept of the pulse at this particular time. When the condition was recognised the carbolic dressings were left off and boracic acid substituted, with the result that the symptoms improved. The discoloration of the urine took several days to pass away: indeed, in none of the other cases I subsequently saw was the urine so intensely dark in colour. The patient eventually recovered, and he was discharged with the abscesses almost cured after a month's treatment.

There are two interesting features about these cases I have narrated which I do not think have been specially noted in cases of carbolic poisoning:—

1. The peculiar relation of the pulse and temperature to one another. One would naturally expect that a high temperature, which is an invariable symptom in all the cases recorded, would be associated with a rapid and fluttering pulse. In my two cases the slowness of the pulse was one of the most characteristic features, for though in both the temperature nearly reached 105°, on no occasion was the pulse found to have reached 100, and for the most part was below 80. The pulse in both was certainly weak, and in one was for a time markedly irregular, but never rapid. I am at a loss to account for this peculiar character of the pulse on any of the ordinary clinical grounds, so I put it down as a special characteristic of the toxic effects of carbolic acid itself. In this connexion it is interesting to note that in two cases of internal carbolic acid poisoning I have inquired into, a slow condition of the pulse was noted in the collapse which preceded death.

2. That the usual antipyretic treatment had little or no effect in reducing the temperature, and that no treatment availed anything until the exciting cause itself was removed.

Leaving out Mr Bell's case, which I have alluded to previously, and which I cannot but think was complicated in a great measure, I find in recent journals the reports of two fatal cases from carbolic acid poisoning, the one by Dr Bradford in the *Boston Med. and Surg. Journal*, March 1881, and the other by Mr Pearce Gould, of Westminster Hospital, in the *Lancet*, 21st May 1881. Both cases occurred in young boys, though after very different kinds of operation, viz., the evacuation of an abscess of the hip-joint, and antiseptic osteotomy. In other respects the symptoms were almost identical. Vomiting was the initiatory symptom, and persisted to the end, and in both cases the patients died asphyxiated, and collapsed in less than forty-eight hours after operation. In neither of the cases I have narrated, on the other hand, did the symptoms come on till the second or third day.

As to the post-mortem changes found in the fatal cases, in all it has been noted that the heart contained dark clotted blood; but when we come to examine the evidences of the irritative effects of the acid, we do not find such unanimity. In Mr Bell's case there was no irritation or congestion of the kidneys, but a congested appearance of the bladder, and here and there diphtheritic-like patches and scattered punctiform hæmorrhages. The post-mortem in Dr Bradford's case showed both kidneys to be increased in size and congested, especially in their cortical portions, while the microscope revealed fatty degeneration of the convoluted and straight tubules. Mr Pearce Gould, on the other hand, found no naked eye post-mortem changes, but, microscopically, " thrombosis of the capillaries and smaller vessels of the lung, with minute spots of round cell inflammatory exudation," and likewise similar changes in the kidneys and stomach.

I think, then, it may be assumed as proved that in a certain percentage of patients there is an individual susceptibility to the external use of carbolic acid producing peculiar toxic symptoms, which disappear when the dressings containing the irritant are changed for some more bland material, though no other treatment is known to be of any service, while in others fatal symptoms of collapse come on so speedily that remedies are of no avail.

Notwithstanding that the percentage of the cases where such an idiosyncrasy does exist is in reality very small, it is but natural that the opponents of antiseptic surgery should be quick to seize upon the evidence of carbolic acid poisoning as proof against the value of the system. And although I must avow myself an intense admirer of Listerian surgery, I acknowledge that the argument is a good one; for, as I have already stated, antiseptic surgery aims at perfection.

The only two substitutes for carbolic acid that have been prominently advocated as open to none of the objections we have been discussing are acetate of alumina and eucalyptus globulus. A year or two ago Professor Maas of Freiburg, on account of the poisonous effects of carbolic acid and its volatile properties, introduced a 15 per cent. solution of acetate of alumina as a cheap and efficacious agent for antiseptic dressings, and possessed of the additional advantage of inducing no toxic effects. It has not, as far as I know, been put to the test in this country, and the chief objection to it is that it is only applicable in the moist or liquid form, and is useless as one of the component parts of any antiseptic dressings, for, in the dry state, it decomposes, acetic acid being given off.

It is to Mr Lister that we are indebted for the introduction of the other substitute, eucalyptus globulus. At a recent debate in the Clinical Society of London on the fatal case of carbolic acid poisoning related by Mr Pearce Gould, and to which I have already alluded, Mr Lister recognised the necessity of being possessed of a suitable material to employ in those cases where grave symptoms occurred owing to the toxic and irritative effects of carbolic acid dressings. This agent, he says, he has found by experiment to be a perfect antiseptic, and quite free from any unpleasant results, owing to its bland and unirritating properties. It cannot, however, be used as a lotion, as the oil of eucalyptus does not mix with water; but he has prepared a gauze by a process similar to that by which carbolic gauze is prepared, in the proportion of one part of the oil of eucalyptus to three each of paraffin and dammer gum. This preparation he has found to be a very efficacious one, and, in his opinion, ought to be very suitable in the class of cases where the idiosyncrasy we have been discussing occurs.

I would therefore submit that there exists no cause for alarm, though we are occasionally brought face to face with the undoubtedly evil effects of the employment of carbolic acid in our surgical dressings, for in these two materials we are possessed of a very efficient substitute when employed together, the one making up for the deficiencies of the other.

It is also, I think, a very graceful act on the part of Professor Lister, while personally he has experienced no evil results from the employment of carbolic acid, to lead the van in bringing before the profession a substitute for what has been termed his "pet reagent," thus removing another of the objections to the antiseptic system, which he has done so much to render popular in this and other countries.

ARTICLE VI.—*Circumscribed Desquamative Inflammation of the External Auditory Meatus.* By Dr WEIL of Stuttgart. Translated by J. J. KIRK DUNCANSON, M.D., Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

MR P., 56 years of age, comes into my consulting-room and complains of fearful pains in his left ear as well as of the whole of the left side of his head. The pains have almost killed him. For weeks he has slept very little. He is no longer able to endure his present condition. The pain has lasted for about eight weeks, but latterly has increased very much. He had never previously suffered from his ear. He has been for a considerable time in the hospital, but without relief. Since he left the hospital, about eight days ago, the ear has been discharging a little. The patient appears to be suffering great pain, seizing his head every moment. On examination there is nothing seen externally, only that the face is somewhat twisted. On closer observation the appearances are those of paralysis of the left side of the face. There is nothing wrong with the right ear, only that the hearing is not quite normal. The lumen of the left external auditory meatus is for the greater part filled up with a firm-feeling polypus. The polypus is attached to the anterior wall, spreading outwards from the point of union of the bony and cartilaginous external auditory meatus. Besides the polypus, one sees in the deeper parts white masses. After removing the polypus we can see the whole of the deeper part of the external auditory meatus filled with these white masses. An attempt made to remove them by syringing failed. There were only a few pieces brought away, the microscopic examination of which showed epidermal-looking cells.

The patient was told to apply fomentations to the ear almost continuously, and to come twice a day to have the ear syringed. The syringing was of no avail, and it was only when lamellar arranged pieces were removed by the forceps that progress was made. It was three weeks before the whole mass was taken away: great quantities were removed at times. Examination now showed a large expansion of the deeper part of the bony external auditory meatus. If one looked carefully he saw the drumhead in the upper and anterior part of the bounding wall of the external auditory meatus. The drumhead showed its gray coloration. The light reflex could not be seen. Posteriorly, and especially posterior inferior from the drumhead, almost in the same level, there exists a surface certainly twiee as large, where small protuberances and depressions alternate. This part has a red appearance, and secretes a little. The probe tells us it is a bony surface. By catheterizing the air passes well, but without perforation's noise to the auscultating ear.

The pains have entirely disappeared, and the facial paralysis is passing away. The hearing is again restored. The secretion continued after removal of the masses about eight days.

To-day one sees only the great distention of the termination of the external ear-passage, besides which the disease has left no traces.

I would now demonstrate the course of the disease. The desquamative inflammation arises in consequence of an irritation. The polypus has certainly arisen secondarily, following which the cholesteatoma-like masses accumulate, and these give rise to the distention. The pains are easily accounted for from the pressure. The explanation of the facial paralysis is more difficult: probably it is the result of an engorgement.[1]

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[1] See in reference to above, "Case of Molluscous Tumour of the Ear," etc., etc., *Edinburgh Medical Journal* for November 1877, p. 390.

ARTICLE VII.—*Case of Occlusion of the Small Intestine in a New-born Child.* By WILLIAM CRAIG, M.D., F.R.C.S. Ed., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine.

(*Read before the Edinburgh Obstetrical Society,* 15*th June* 1881.)

CASES of occlusion of the intestine in a new-born child are sufficiently rare to justify me in bringing this one under the notice of the Fellows of the Obstetrical Society. This case is specially interesting on account of its rarity and the nature of the occluded portion of the bowel.

On the 11th April last Mrs A. was confined of her third child. Her first child was a female, and died soon after birth from some unascertained form of intestinal obstruction. I did not attend her on that occasion, but I have learned that the child died soon after birth on account of some obstruction in the alimentary canal; and although no post-mortem examination was made to ascertain the exact cause, yet I am fully satisfied that it was *not* imperforate anus. I attended Mrs A. on her second confinement fully two years ago. The child was a healthy female, and had no abnormality whatever. It is still living, and is strong and healthy. Both parents are young and healthy. I also attended her on the present occasion. Her labour was easy and natural. The child was a strong, healthy male. When I called the next day I found that the child had been very restless during the night, and had evidently been in great pain. It had vomited considerably, and the bowels had not moved. The child passed its urine quite freely. The nurse had administered some castor-oil, but it too had been vomited. I now learned for the first time the circumstances regarding the death of the first child already referred to.

On carefully examining the child I could detect no malformation. The anus was quite perforate, and I easily introduced up the rectum for fully two inches an ordinary full-sized gum elastic catheter. I could find no trace of meconium on the catheter. It was covered with a white mucus. I was quite satisfied that the obstruction, if any such existed, was situated too high up in the abdomen to be operated on from the perineum. I ordered injections of soap and water, but these failed to bring away any fæcal matter. On the second day after the birth of the child there was slight distention of the abdomen and well-marked tympanitis. The vomiting still continued. The vomited matter was of a greenish-yellow appearance. As the bowels had not moved, it was evident that there was some serious intestinal obstruction within the cavity of the abdomen. The case appeared to me quite hopeless. In fact, the child was fast sinking. It died on the third day, about seventy-two hours after birth.

On the following day I was allowed to make a post-mortem examination. I found the abdomen distended, and in many

parts discoloured. On opening into the abdomen the peritoneum was seen to be slightly inflamed, and some bloody serum was found in the peritoneal cavity. The upper part of the small intestine was congested, enlarged, and greatly distended, and there was on the small intestine a well-marked obstruction, the exact nature of which I could not at the time determine. I accordingly removed the whole of the alimentary canal situated within the abdomen, for the purpose of having the abnormal condition of parts carefully examined.

Mr Symington, Lecturer on Anatomy in the Edinburgh School of Medicine, has carefully examined the preparation, and I am greatly indebted to him for assisting me to arrive at an accurate description of the parts. The following was what Mr Symington and I found:—

There was a well-marked obstruction situated in the upper fifth of the ileum. At the seat of obstruction, on the side of the bowel opposite to the attachment of the mesentery, there was a fibrous band resembling in structure the great omentum, about two inches long and one inch broad. The opposite end was free in the abdomen. This was probably a part of the great omentum which had been originally attached at both ends, and may have been the primary cause of the constriction. Be that as it may, this fibrous membrane was in no way constricting the canal at the birth of the child. Above the point of obstruction the bowel was thickened, greatly congested, and dilated to the size of that of an adult. It was distended with gas, and contained meconium. The mesentery was thickened and congested. The stomach was healthy and normal; so was also the duodenum. From the commencement of the jejunum the intestine was somewhat dilated, the dilatation gradually increasing till it reached the point of obstruction. Below this point the small intestine was slightly less in diameter than normal, and was filled with a greenish granular-looking substance mixed with mucus, but contained no meconium. The large intestine was about the thickness of a quill, and contained only white mucus.

On opening into the bowel above the obstruction it was discovered that the intestine ended in a *cul de sac*. We next opened into the bowel below the obstruction, and found that the intestine commenced in a *cul de sac*. These two portions of bowel were connected by a band of fibrous tissue, ribbon-shaped, half an inch in width and about the same in length. The band was quite translucent when held up to the light.

Such being the pathological condition of the intestine, several interesting questions present themselves. What was the nature of the occlusion? and how was it produced? There was no continuity of the canal, but complete occlusion for half an inch. Whether or not there ever was continuity of the alimentary canal at this point cannot now be determined, but it is evident that if ever such a continuity existed it must have been very early in embryonic life, for the contents of the bowel above and below the occluded portion were very different, there being no meconium in the part below the obstruction. It is quite possible that there may have been continuity of the intestine at this part, and that a piece of the great omentum becoming adherent to the bowel may have dragged on the bowel and have produced congestion and inflammation of the intestine, and the two opposing surfaces, being brought into contact by the dragging of the attached band of omentum, would adhere to each other. The continuity of the bowel would then be destroyed, and thus complete occlusion would occur. The occluded portion of bowel would afterwards become partially absorbed, and hence its present translucent condition. I do not assert that this is what happened, but I affirm it is at least a possible, if not a probable cause of this rare malformation. Cases of congenital malformation of the alimentary canal are not very uncommon, one of the most frequent forms being that known as imperforate anus, a condition of parts easily accounted for by a reference to the development of the lower bowel. I am not aware of any case exactly similar to the one now described, and therefore am unable to explain fully all the circumstances connected with it. To my mind, however, the above hypothesis more fully than any other accounts for the pathological conditions present in this instance.

With regard to diagnosis and treatment not much need be said. It must be evident to all that the exact nature of the obstruction could not have been ascertained during life. Two things were indeed plain, that there was some intestinal obstruction present, and that it was not imperforate anus. It was also apparent that the seat of obstruction was high up in the abdominal cavity. A catheter passed up the rectum easily for fully two inches, and no bulging of the intestine could be felt.

With regard to treatment I have not much to add. It is evident from the nature of the occlusion that no treatment could by any possibility have saved this child's life. The treatment adopted, castor-oil by the mouth and injections by the rectum, failed; but it is also evident no treatment could have relieved the obstruction, and I maintain that the treatment adopted was the proper one in the circumstances. It was proved that no operation by the rectum or perineum could have been of any avail, nor could have been justifiable, seeing that the occlusion was so high up in the abdomen. The operation of gastrotomy in the new-born infant is one which could hardly be successful under any circumstances, and in this case it was nearly two days before one could be certain that an obstruction existed at all, and by that time it was too late to be of any avail. Even in the adult the operation is one at all times attended with great risks, and it is one which would hardly be justifiable in a new-born child, the more especially when we bear in mind that obstruction in the new-born child is generally due to malformation, and not unfrequently, as in the present case, a malformation which cannot be rectified.

ARTICLE VIII.—*Eucalyptus Globulus: its Use in Typhoid Fever.*

By BENJAMIN BELL, F.R.C.S.E.

THIS short note is supplementary to a former one published in this Journal (vol. xxiii. p. 680). After mentioning in that paper the remarkable benefit which, in my experience, had attended the administration of the tincture of the *Eucalyptus globulus*, or blue gum, in certain cases of what appeared to be very formidable disease of the stomach, I suggested that the same remedy might be found advantageous in cases of typhoid fever. My grounds for forming this anticipation are obvious enough. The drug possesses *antiseptic* qualities; it acts, as we have seen, beneficially upon the lining membrane of the stomach, perhaps of the duodenum. The characteristic lesion to be chiefly dreaded in typhoid fever is an irritated condition, a congestion, an inflammation, passing into ulcers or sloughs of the small follicular glands of the intestinal canal.

Ever since venturing to make the suggestion referred to, I have kept it in view, prescribing a teaspoonful of the tincture of *eucalyptus*, well diluted, at regular intervals of three or four hours, in all the cases of typhoid fever which have occurred. My distinct impression is that, as a rule, the duration of the disease has been shortened, and the tendency to diarrhœa diminished. If mixed with a large wineglassful of water, the medicine is far from disagreeable to the patient, and may be steadily administered in the intervals of nourishment without becoming irksome. By food, I mean milk and lime-water. As each dose of the tincture contains a drachm of spirits of wine, it is worthy of consideration that we are, in fact, giving a slight stimulant, not only well diluted, but possessed of a medicative property at the same time. This may therefore come in lieu of those other stimulants so often deemed desirable, at least in the advanced stages of the fever, while, in the intervals of the bland milky nutriment, it will be brought into immediate contact, as an antiseptic, with the seat of threatened ulceration and sloughing.

In private practice, with a comparatively small number of cases, it would be rash to speak dogmatically as to the results of treatment; but a reliable opinion might be arrived at, were physicians connected with a large hospital which admits fever cases to employ the remedy in every *alternate* case under their care. If those patients who got the medicine were found—after its employment in a considerable number of cases—to have made more rapid recoveries with fewer bad symptoms than those from whom it was withheld, it would be reasonable and safe to draw an inference in its favour.

I may mention that my confidence in the *eucalyptus* in cases such as those formerly described continues unabated. Indeed it has been strengthened, not only by the results in cases coming under my own observation, but also by several aggravated examples throughout the country reported to me by the first patient to whom I administered it. He had benevolently recommended it, on his own responsibility, when he heard of persons suffering similarly to himself, before his restoration to health.

Part Second.

REVIEWS.

The Diagnosis of Diseases of the Spinal Cord. By W. R. Gowers, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College, Senior Assistant Physician to University College Hospital, Physician to the National Hospital for Paralyzed and Epileptic. London: J. & A. Churchill: 1880.

We must apologise to Dr Gowers for our long delay in noticing this truly admirable book, published in April last year. The fact that a second edition has been so speedily called for confirms the opinion which we formed on first perusing it, viz., that it would prove acceptable to the profession.

In the opening paragraphs the author shows the importance of an exact diagnosis, and makes some valuable remarks as to the differential diagnosis of organic and functional disease. A brief description of the medical anatomy of the spinal cord follows. The relationship of the vertebral spines to the nerve origins is carefully described and figured in a woodcut, the facts on which the description is based being partly the result of special observations made by Mr V. Horsley, Demonstrator of Anatomy in University College. The inconvenience of the present system of nomenclature of the columns of the cord—which all teachers and students must have experienced—is pointed out, and the author proposes to discard the terms column of Türk, column of Goll, and column of Burdach, and to substitute for them the terms direct pyramidal tract, postero-median column, and postero-external column. We hope to see these terms generally adopted, and we think the proposed change is fully justified by the reasons given in the footnote on page 11.

The physiology of the cord in relation to the symptoms of its diseases is next considered. In speaking of the paths of the sensory conductors for touch and temperature, which, according to the experiments of Woroschiloff and Ott, pass through the lateral columns in the dorsal region of the lower animals, the author describes and figures a case of crushed cord which occurred in his own practice, in which there was great loss of sensation during life, and in which an ascending degeneration in the front part of the lateral columns above the lesion was found on post-mortem examination. This fact, which at present stands alone, is brought forward in support of the view that the sensory fibres in man also pass through the lateral columns; but it will, as the author remarks, require future confirmation.

The reflex actions are next very fully considered. This, as was to be expected, is one of the most original and interesting portions of the book. The author describes the following superficial reflexes, viz., plantar, gluteal, cremasteric, abdominal, epigastric, lumbar, dorsal, and interscapular. The segments of the cord through which they individually pass are carefully detailed, and the importance of the systematic examination of each individual segment by means of the reflex which passes through it is insisted upon. The fact that the superficial reflexes are abolished while the deep reflexes are increased in cases of cerebral paralysis (hemiplegia), is explained by supposing that the controlling arrangements which regulate these two sets of reflexes are differently arranged at their cerebral ends. The deep reflexes are supposed to be controlled directly from the cerebral cortex, the superficial reflexes by a lower cerebral centre (the optic thalamus, for example), which is itself controlled by the highest centres in the cortex. The explanation is ingenious, but it fails, we think, to explain the facts where the lesion is situated in the internal capsule. As is now well known, the fibres of the pyramidal tract form a direct connexion between the motor centres in the cerebral cortex and the large nerve-cells of the anterior cornua of the spinal cord. And yet a lesion of this pyramidal tract is attended by the alteration in the reflexes (diminution of the superficial, increase of the deep) already alluded to. Space does not allow us to quote Dr Gowers' explanation in full; we can only direct attention to the point.

The "knee phenomenon," the so-called "patellar tendon reflex," is (in the first edition) considered to be without doubt a true reflex action. In the second edition, which we also have before us, this opinion is modified. The recent observations of Tschirgew and others have convinced the author that the contraction of the quadriceps which follows a blow upon the tendon is not excited by stimulation of the nerves of the tendon, but that the stimulus originates in the muscle, the tendon being only, so to speak, an instrument by which the stimulation is produced. Dr Gowers does not, however, agree with Westphal, who thinks the contractions of the quadriceps are simply the result of local excitation produced by dragging on the muscle. He opposes to this view—and, we think, with great justice—the fact that the contractions of the quadriceps are prevented by any lesion which prevents reflex action, and he very ingeniously explains the phenomenon by supposing that it is partly the result of reflex action, partly the result of local irritation. "Some," he says, "have endeavoured to explain the discrepancy by the suggestion that reflex action may occur in a much shorter time than is commonly supposed. This suggestion is not at present justified by any known facts. Another, and, I think, much more probable explanation is this. If we regard the contractions as local, we have still to account for the irritability which permits the local stimulus to cause a contraction. This irritability is developed by passive tension. If the muscle is relaxed the fibres may contract if they are struck directly, just as do the fibres of a separated frog's muscle, but no contraction can be produced by striking the tendon. Hence I have suggested that the tension excites, by a reflex influence, a state of extreme irritability to local stimulation,—such as that of a tap on the tendon, or such as the vibration from a tap near the muscle, or from a tap on the bone to which the tendon is attached,—which thus excites a visible contraction."

This explanation, it will be observed, is the same as advanced in the first edition for the ankle clonus. Dr Gowers, therefore, now agrees with Dr Waller and others, who think that the two phenomena are of a similar nature. In passing, we may remark that Dr Gowers has modified some of the time measurements (for the knee phenomenon) given in the first edition. In explanation he says—"Some measurements which I made of the interval (*Med.-Chir. Trans.*, 1879, p. 275) gave a longer interval, probably in consequence of the movement of the foot being taken as the indication of the commencing contraction. 'Load' will increase greatly the period of latent stimulation, probably by causing the initial contraction to expand itself on the elasticity of the muscle. The measurements given above were obtained by recording the commencing contraction of the muscle."

Alterations in co-ordination depending upon spinal cord disease are next described. The electrical condition of the muscles in cases of paralysis is then reviewed. The organic reflexes (urination, defecation, etc.), which have their centres in the spinal cord, are next considered; and, after a few pages devoted to pain and spasm in cases of spinal disease, the author proceeds to describe the method of arriving at an anatomical and pathological diagnosis. An admirable diagram and table is given on page 52, showing the approximate relation to the spinal nerves of the various motor, sensory, and reflex functions of the cord. The last ten pages of the book are devoted to an account of illustrative cases.

We have endeavoured, so far as our space allows, to direct attention to the more important points in this interesting lecture, but we would strongly advise our readers to peruse it for themselves. The book is one which should be in the hands of every practitioner and student.

A Manual of Diseases of the Throat and Nose. By F. HUNTINGTON BOSWORTH, A.M., M.D. New York: William Wood & Co.

A Practical Treatise on Nasal Catarrh. By BEVERLEY ROBINSON, A.M., M.D. (Paris). New York: William Wood & Co.

THE former of these treatises may be divided into four parts,—the first relating to the use of the laryngoscope and the various instruments used in the treatment of the mucous surfaces covering the cavities under consideration; second, of diseases of the fauces; third, those of the nasal cavity; and, lastly, of the larynx.

While there is nothing particularly new in the pages before us, the author has done his work well, and in clear and expressive language gives the result of his experience, by no means small, at the same time making free but acknowledged use of the writings of others who have preceded him. From what we gather from his pages we are inclined to think that our Transatlantic brothers and sisters suffer as to their noses and throats even more than we from the effects of damp and changeable climate, though at the same time we suspect their free use of ice-cold water with and after eating hot food may have something to do with it. When treating of gargles, under pharyngitis, Dr Bosworth says that it is easy, with a little practice, to gargle so that fluid gets at the posterior wall of the pharynx; this, we rather fear, could be accomplished by only a few. "The proper method of gargling," he states, "is to take the fluid into the mouth, throw the head back, and to commence the process of swallowing it, arresting the act, however, just at the point where the voluntary muscles act; that is, the patient should attempt to swallow the fluid, but should stop before the act is complete, and at a point where it is possible for him to expel it again." It is just this manœuvre which is so difficult to execute. We quite agree in his condemnation of the practice of tearing off, by means of forceps, the swollen mucous membrane in cases of hypertrophic nasal catarrh, as with the diseased tissue healthy membrane, periosteum, and even portions of the turbinated bones, are apt to be at the same time removed. Two somewhat novel plans for the treatment of epistaxis are mentioned: one, proposed by Dr Robinson of New York, the introduction of a thin and empty indiarubber bag into the nostril, which, when *in situ*, is blown up, somewhat in the same way as the obstetrician uses Barnes's bags to obtain pressure upon the bleeding point. This, however, must, in such an irregular cavity as the nares, be frequently unable to attain the desired end. The other is the filling the nostril with plaster of Paris, the cure, however, being almost worse than the disease.

As a means of removing foreign bodies from the nostrils of a child, an ingenious plan is proposed of having the child's head firmly held by an assistant, and then blowing into its mouth, when the foreign body may be expelled with force. The unfilled nostril should not be stopped, as the pressure of the air so forced in might injure the tympanum.

There is nothing particularly fresh to note in that portion of the work devoted to the larynx, where we find shortly considered catarrh, phthisis, syphilis, neuroses, and tumours. At the end is a chapter upon extirpation of the larynx, with a table of all the cases operated upon since Czerny proposed the operation in 1870, the total number being twenty-three. The operation has been performed for carcinoma, sarcoma, perichondritis with necrosis of the cartilages, and lymphatic granulosa, and we find that, putting aside the cases of malignant disease, in which, sooner or later, all succumbed, that of the seven remaining five were cured, one died from the operation, and one seven months after, from an indirect result of the operation.

The author is evidently a careful clinical observer and therapeutist, and we are particularly pleased with the high estimation in which he holds the use of spray as a method of conveying medicaments to the various parts under consideration, in place of the use of brushes and sponges for directly applying the same, touching by caustics, etc., so much used by some, and which, the patient being unable to apply by himself, necessitates his remaining under personal treatment longer than is perhaps sometimes absolutely required.

Dr Robinson's volume is devoted solely to the consideration of the catarrhal conditions occurring in the nasal cavities, and is consequently a less pretentious work than the former. He also devotes a considerable space to a description of how to examine the parts, and of the various instruments and appliances used by himself and others in the treatment of this complaint; but none of these appear to be new, or, if so, are but modifications of similar ones already well known.

The author treats specially of coryza, acute and chronic, of hypertrophy of the turbinated bones, and at somewhat greater length of follicular disease of the naso-pharyngeal space.

Among other remarks, Dr Robinson considers this posterior nasal catarrh to be a not uncommon cause of phthisis, believing the morbid condition passes from the nasal cavities downwards into the lungs, and states that of the purely catarrhal form it is by all odds the most frequent cause. Of this, however, we are not at all so sure.

In both cases the works now before us—and like most emanating from the other side of the Atlantic—are well got up, paper, type, and woodcuts being excellent, free use of the latter, which are numerous, being drawn from the works of Mackenzie, Cohen, Heitzmann, Luschka, Ziemssen, etc., but in each case carefully acknowledged by the respective authors.

Diagnosis and Treatment of Ear Diseases. By ALBERT H. BUCK, M.D., New York City; Aural Surgeon to the New York Eye and Ear Infirmary; Instructor in Otology in the College of Physicians and Surgeons in the City of New York. New York: William Wood & Co., 27 Great Jones Street: 1880. 8vo. Pp. 411.

WE have here, in text-book form, what must be a considerable portion of the labours in private and hospital practice of several years. Thus this book has an especial interest, because it is not a mere compilation from the labours of others, but is the outcome and the record of the author's personal experience. Perhaps its arrangement and the great number of recorded cases do not render it so well adapted for the junior student as for one more advanced in years, and to whom a knowledge of the ear and its diseases has become of some interest. To the practitioner devoting his attention to the study and treatment of ear diseases the work is extremely valuable and refreshing, and its well and fully recorded cases enhance it. The first chapter contains a brief representation of the physiology of the ear, which is profitable reading to the practitioner as well as to the student dissecting the ear, let us say. In the second chapter we have the method of making an examination of the patient suffering from diseases of the ear very well described, as well as the necessary instruments and their uses. In Chapters III. to XI. we have diseases of the auricle; diseases of the external auditory meatus; methods of examining the middle ear; diseases of the middle ear (non-purulent forms); diseases of the middle ear (purulent forms); fractures of the temporal bone; diseases of the mastoid process; miscellaneous conditions of the drum-membrane, ossicles, and tympanic cavity; different forms of aural disease in which the labyrinth is believed to be involved. There is a good, copious index at the end, which is a strong point in many American books, and certainly extremely useful and worthy of imitation.

We cannot approve of the author's strong denunciation of the frequent use of the syringe in cleansing the ear, and his urgency in advocating the use of forceps, cotton-holders, probes, and curettes, which are all useful and necessary in their place in the hands of the skilled practitioner; but we have still cases cropping up where an ear has been probed and otherwise maltreated for the purpose of ascertaining the presence or absence of wax or a foreign body in the external meatus—a course of procedure which Dr Buck himself does not sanction. Then as to the removing of foreign bodies—Chapter IV.—far too little is said as to the efficiency of proper syringing in their removal, and far too much about curettes, sharp-pointed hooks, etc., which frequently do far more harm than the continued presence of the foreign body in the external auditory meatus would ever do. In syringing for the purposes of thoroughly cleansing an ear where the drumhead is totally or partially destroyed and a discharge exists, we hold that no instrument or series of instruments can be so efficient as a well-directed use of the syringe, and in the present-day use of antiseptics we need fear no harm from a properly prepared solution, for syringing out the ear, lodging itself in the intricacies of the middle ear.

Dr Buck embraces under one section of the diseases of the external auditory meatus the four following, which have generally had a section devoted to each of them in the text-books—otitis externa diffusa, periostitis, eczema, otomycosis—because he says it is impossible in the great majority of cases to make a positive diagnosis! and "so far as the patient's interests are concerned—*i.e.*, so far as the treatment is concerned—it really makes very little difference whether we succeed or not in making a more accurate diagnosis than this!" Although we have quoted the above passage, still we consider the whole chapter well worthy careful study and consideration. We doubt the efficacy, and do not approve of the testing the mobility of the membrana tympani by using a probe instead of the preferable and free from danger pneumatic speculum of Siegle. The chapters on diseases of the middle ear—V., VI., VII.—are excellent and original, not adhering to the general classification. We have only to quote the subdivisions of the chapters to show that Dr Buck has not slavishly followed preceding writers. Thus in Chapter V. we have excellent instruction as to the methods of examining the middle ear; then, chapter VI.—Diseases of the Middle Ear (non-purulent forms)—after some preliminary remarks, we have sections treating of affections of the Eustachian tube; acute and subacute inflammation of the middle ear; catarrhal inflammation of the middle ear; chronic subacute catarrh. In Chapter VII.—diseases of the Middle Ear (purulent forms)—we have acute purulent inflammation, with a subsection, acute inflammation of the posterior fold; syphilitic disease; chronic purulent inflammation, with sub-sections, simple uncomplicated cases, proliferative cases (foreign bodies in the middle ear), cases in which the bone is involved. For the treatment of mucous and purulent inflammations of the middle ear Dr Buck uses a glass pipette, by means of which the middle ear is washed out, through an artificial opening in the drumhead when necessary, or various medicated solutions can be dropped into the cavity.

Our author devotes a very small portion of his book to the "different forms of aural disease in which the labyrinth is believed to be involved," only some fifteen pages; but in doing so we consider it as a further proof that Dr Buck had made up his mind to write of things he knew and had thought about, not to make a book for an advertisement.

The great number of cases contain much that is interesting, while the illustrations, paper, printing, and binding are all that one could desire in a standard medical work.

A Practical Treatise on Diseases of the Skin. By LOUIS A. DUHRING, M.D., Professor of Diseases of the Skin in the Hospital of the University of Pennsylvania, author of *Atlas of Skin Diseases*, etc. Second Edition. Philadelphia: J. B. Lippincott & Co.: 1881.

IT has often been remarked that seeds and plants transferred to new and virgin soil grow and develop with a luxuriance which is wonderful, and this observation can be as truly applied to indicate the strides which the department of dermatology has made since the new learning with regard to it was brought by many earnest students from Vienna, Paris, and London to the congenial soil of the United States. Nowhere has such devotion to the study of skin diseases been seen than now exists there. Books on the subject constantly appear; the only periodical devoted to it alone in the English language hails from New York; and atlases of rare excellence are in course of publication there. Whether in respect to the beauty of its typography or the value of its contents, the work before us must be regarded as the handsomest and most complete treatise on skin diseases which has yet appeared. In saying this we mean no disparagement to the classical work of Hebra and Kaposi, which—especially on the literature and history of skin diseases—will always hold its own; but Dr Duhring's is, as he names it, a practical treatise, and in systematic arrangement is nowhere equalled. When the first edition was published in the end of 1876, it at once took a foremost place; and now, thoroughly revised and much enlarged, it will command a still wider field of favour.

The chapter on the anatomy and physiology of the skin gives an excellent *résumé* of all the most recent views. Duhring holds with Langerhans and Piffard that the cells of the horny layer of the epidermis were never in any period of their growth cells of the mucous layer, and that each layer is regenerated independently of the other. Undoubtedly there is much to be said in favour of this. The contrast between the cells themselves is great. Pathologically, too, the continual shedding of epidermic films in pityriasis rubra is an argument in support; and even in psoriasis, where the formation of the scales has been accounted for by the rapid drying of the rete cells rather than their duly taking on their horny transformation, we may equally well explain their origin by supposing a coincident hyperplasia of both mucous and horny layers, in consequence of which the horny cells are imperfectly formed.

It has often struck us that the spiral arrangement of the duct of the sweat gland in passing through the epidermis—the duct, in fact, consisting of a spiral tunnel in that layer of which the cells form the walls—was intended to diffuse the perspiration insensibly through the cuticle. We have not, however, seen this better put than in the following sentences:—"As the rete Malpighii contains a large quantity of fluid, and the horny layer, properly so called, is very coherent, these layers derive nothing from the perspiration; but the most superficial layer, the pulverulent, furfuraceous, or porous horny layer, collects a large quantity in its interstices. The perspiration, as it reaches this point, resembles a river lost in the sands: nearly all the fluid disappears. It is this fact which causes the perspiration given off under ordinary circumstances to remain insensible to the eye; and it is only when this secretion is poured out very abundantly that it wells up to the surface in distinct drops."

The classification adopted is that of Hebra slightly curtailed and modified, we think, after some experience of it, advantageously so, though, perhaps, Exudations, employed by Hebra, is better than Inflammations, as Duhring translates it, as the heading to his third class. Duhring wisely affixes the synonyms to the name he selects for each disease. No vagaries in spelling are indulged in, and a terse, well-worded definition in large type introduces us to the fuller description which follows. It is abundantly evident that no pains have been spared to make this volume an accurate exponent of the latest views and information on the subject of which it treats; and descriptions of rare diseases, our acquaintance with which has begun or become greater since the first edition appeared, are interwoven with the text or introduced for the first time. Among these are uridrosis, phosphorescent sweat, urticaria pigmentosa, dermatitis circumscripta herpetiformis, impetigo herpetiformis, pityriasis maculata and circinata, dermatitis exfoliativa, dermatitis medicamentosa, dermatitis papillaris capillitii, fungoid neoplasmata, tuberculosis cutis, podelcoma ainhum, perforating ulcer of the foot, and myoma cutis. The exact position of some of these diseases may in future be questioned, how far they are mere varieties of other forms, or whether they deserve a separate and independent nomenclature; but we are in a better position to determine this from having Duhring's clear and shortly-worded account of them to refer to.

One naturally turns to eczema as a sort of test of the way in which a treatise on skin diseases is written. Common though the affection is, there is perhaps no other so difficult to portray well, so various are its phases. Dr Duhring's account leaves nothing to be desired; and just as he has in his Atlas furnished most life-like representations of many of its forms, so in this work he has fully placed before his readers a description of the disease which ought to render more simple its successful management. The local treatment, in particular, is manifestly the result of extensive and well-matured clinical experience, the rules for the use of remedies are so distinctly and unhesitatingly laid down, and the principles of due selection in the various forms and stages are most judicious.

One of the most obstinate of the curable diseases of the skin is non-parasitic sycosis, and the management of this will be found fully detailed. While he mentions other modes, Duhring, in cases which have lasted some time, appears to prefer the soap treatment, followed by application of unguentum diachyli spread on muslin. He advocates repeated shaving, but does not state his experience or opinion of epilation, the *sine quâ non* at Vienna.

Separate articles are devoted to impetigo and ecthyma as distinct from pustular eczema. This must, we think, be regarded as doubtful. It seems to us that a pustular eczema in a strumous child would account for most of the cases of symptomatic impetigo, while the same disorder in a broken-down subject assumes in general the characters of ecthyma. The terms are useful as a means of describing a form of eruption. We scarcely think they are equally applicable to a form of disease. Under the head of dermatitis Duhring includes many anomalous forms of inflammation of the skin. The article on dermatitis medicamentosa gives an excellent and well-condensed description of the various medicinal rashes to which much attention has been in recent years devoted.

We might thus go on annotating here and there, but this seems unnecessary. Throughout, the execution is singularly uniform; no trace of carelessness or slovenliness is anywhere discoverable; the style is elegant, and the diction free from those Americanisms which still grate somewhat on a British ear, though, from a degree of quaint expressiveness which they possess, not a few have already taken root and become popular. As compared with other recent works on skin diseases, this, from its completeness, must take a foremost place. Though it does not exhibit the distinct originality which characterizes that of Liveing, it is free from the discursiveness of Fox, and while built on the lines of Hebra and Kaposi, is a worthy representative of the dermatology of to-day.

The Hunterian Oration, delivered at the Royal College of Surgeons of England, on the 14th February 1881. By LUTHER HOLDEN, Consulting Surgeon to Saint Bartholomew's Hospital, etc., etc. London: J. & A. Churchill: 1881.

EVERY year naturally adds to the difficulties of him who has to deliver the Hunterian Oration, because, the topic having been thrashed assiduously for well-nigh a century, the few remaining grains of wheat can hardly compensate for the toil. A William Lawrence or a James Paget having tried their roman hands, successors in the honourable office may reasonably lose heart.

These were our thoughts before perusing this able and interesting discourse by Mr Holden—a gentleman greatly esteemed by all who know him for his eminence as a surgeon, his great success as a teacher of anatomy, and also for his retiring modesty, his urbanity, and goodness of heart. But, in spite of the inherent difficulty of the task, he has made, we are free to confess, a distinct and important contribution to the biography of John Hunter. He has rectified more than one date, and has shown very conclusively, by various arguments, that the first twenty years of that great man's life could not have been characterized by the neglected education and the aimless occupations which successive biographers have submissively accepted as real. In short, Mr Holden proves, in our opinion, quite indisputably, that the London career of John Hunter was preceded by a youth of preparatory training in perfect accordance with the accepted adage, that "the boy is always father to the man." It now appears that the parent who superintended with anxious care the education of his elder son William Hunter, enabling him to become the cultivated man he was, survived till John was in his fifteenth year; and retaining, as he did, his faculties to the last, doubtless took care that the boyish education of his younger son was not neglected. Facts ascertained by Mr Holden—namely, that John had been an entered alumnus of the University of Glasgow, and was at any rate in the class of natural philosophy—confirm this belief, and contradict the common impression that he came to the metropolis a rough, undisciplined youth. That his mind had very little bias towards the classical tastes and high culture of Dr William Hunter must be apparent to all readers of his published writings; but that an ignorant, self-indulgent, and aimless lad of twenty-one should all at once develop into the man of fixed, indomitable purpose and persevering zeal which John Hunter became and continued to be to his dying day, would be anomalous and altogether at variance with universal experience.

The oration is fresh and full of thought; it is enriched by many valuable notes, and will amply repay a careful perusal.

Lectures on Syphilis. By JAMES R. LANE, F.R.C.S. Second Edition. London: J. & A. Churchill: 1881.

ON a former occasion we noticed the first edition of these admirable lectures, and we have great pleasure in again recommending them to those of the profession who wish to study the more abstruse points in connexion with this subject.

Spermatorrhœa: its Causes, Symptoms, Results, and Treatment. By ROBERTS BARTHOLOW, A.M., M.D. New York: William Wood & Co.: 1879.

THE chief objection we have to this work is its title. Spermatorrhœa resulting from masturbation or excessive venery is a very rare disease. It is more the dread of it that forms the chief ailment in cases of sexual hypochondriasis, and this fear has been fostered by quack literature bearing similar titles to the work under review. In other respects the book is a sensible and scientific one.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING IX.

Wednesday, 6th July 1881.—Dr P. H. WATSON, *President, in the Chair.*

I. *Mr Joseph Bell* showed three specimens of CALCULI removed from patients during the last month. The first was a calculus about the size of a large bean, removed by the ordinary lateral operation, from a boy æt. 4. The symptoms of stone were comparatively trivial, the boy was in good health, the operation easy, and the recovery rapid. The second occurred in the person of a tall, slight man, æt. 32, with the narrowest pelvis Mr Bell ever had the opportunity of examining. The stone was carefully measured, and diagnosed to be about the size of a walnut. The patient was cut in the ordinary way, and the bladder easily entered; but on introducing the forceps it was found that, on account of the smallness of the pelvic outlet, they could not be properly opened to grasp the stone. A scoop with a sharp curve was then used to tilt the stone out, which was accomplished successfully. In both of these cases the tube was dispensed with. The recovery was exceedingly good, if anything more rapid than usual. The third case could hardly be called one of lithotomy, as the stone was not removed till after the patient's death. It, however, presented some remarkable features. Mr Bell had been sent for to see an elderly farmer, supposed to be dying. The patient had always suffered from urinary irritation, and had been seen by at least four medical men of late. The doctor who sent for Mr Bell had begun to suspect the presence of a stone. Mr Bell, on examination, found this verified. The patient had a roomy pelvis, but the stone was felt to be very large, filling up the greater portion of the outlet, and not readily movable in it. He was not at all well, and his removal into the Infirmary was therefore recommended. His doctor accordingly drove him in a few days later, and he stood the journey wonderfully well. His urine, however, was found to be scanty, albuminous, and contained tube-casts. Five days after admission symptoms of acute uræmia appeared, and he died, in spite of treatment. In this case Mr Bell called in his friends Mr Duncan and Dr Angus Macdonald, who both agreed with him that the stone was too large to come through the pelvis, and that it could be removed only by the high operation. The man's death prevented this; but the steps of the operation were shown to the class in the pathological theatre just before the post-mortem examination was made. The calculus was found very immovable, and in one place adherent to the bladder-wall, which was ulcerated. The ureters were greatly dilated, acting as reservoirs for the urine. One of the kidneys was in a high state of inflammation, with old abscesses; but the other was comparatively healthy. The man had suffered from symptoms of stone as far back as he could remember. He married somewhat late in life, but, notwithstanding the terrible malady he was suffering from, had managed to procreate several children. The stone weighed nearly 11½ ounces when removed.

II. *The President* showed—(1.) ONE-HALF OF A TONGUE removed for epithelioma by means of the thermo-cautery after the jaw had been split in the middle line. (2.) The KNEE-JOINT OF A CHILD excised a few days previously. Suppuration had occurred in the upper pouch of the knee-joint, but not in the lower. The cut surfaces of the bones were brought together by means of Chinese fishing-gut, which was not absorbed. The dressing used was the modification of antiseptics he had brought under the notice of the Society before, and it continued very much more successful in his hands in securing rapidity of cicatrization than the carbolic muslin and waterproof jaconette. But, in spite of the rejection of the use of the spray by Bilroth after an extended trial of its employment, Dr Watson was of the opinion that the spray was of the greatest importance. (3.) AN EPITHELIOMATOUS TUMOUR OF THE HEEL. Four years ago a similar tumour had been removed from the same situation. On this occasion the disease, which had recurred and was firmly adherent to the os calcis, was removed along with the bone so as to effect the entire extirpation of the disease.

III. *Professor Fraser* then read a paper on THE FAILURE OF SALICIN AND SALICYLATE OF SODA IN ACUTE RHEUMATISM ACCOMPANIED WITH INFLAMMATION OF THE GENITO-URINARY MUCOUS MEMBRANE.

Dr Brakenridge felt that the Society was much indebted to Professor Fraser for his interesting paper. He also had some experience of the drug in gonorrhœal rheumatism, and his experience was quite the same as that of the Professor. In two cases this winter he found that it had much the same effect, reducing the temperature without otherwise modifying the disease. He, however, differed from Professor Fraser, as he thought that gonorrhœal rheumatism and acute rheumatism were two entirely different diseases. In the Professor's cases there was no family tendency to rheumatism: there was also, with one doubtful exception, an absence of cardiac lesion, and there was very little of the shifting from joint to joint—the gonorrhœal rheumatism being most apt to locate itself in one particular joint. The disease was also very protracted. He thought that Professor Fraser's title was unfortunate, as it would seem to indicate that ordinary acute rheumatism and gonorrhœal rheumatism were practically the me, whereas the paper, if it proved anything, proved that they were different, and that the drug was a test between them. The great value of the paper was that it illustrated the value of drugs as diagnostic tests; but as to the distinction between ordinary and gonorrhœal rheumatism, he believed this could be made out by carefully recorded cases.

Dr Young (of Portobello) had had considerable opportunity of studying gonorrhœal rheumatism, as he had often occasion to take charge of the military hospital at Piershill Barracks. He agreed with Dr Brakenridge that the disease was a very protracted one, only slightly fugitive in character, and more apt to be monoarthritic than polyarthritic, affecting one joint, and proving very obstinate in that joint. Two years ago he had charge of the Piershill hospital, and at that time, having several cases of gonorrhœal rheumatism, he was naturally led to think of its treatment by means of the salicylates, etc. This was at a period when the Government did not provide these drugs, but a predecessor had, out of his own pocket, supplied some salicylic acid. He administered first of all salicylic acid and acetate of potash in equal parts every two or three hours. The result was most disappointing, and he was led to the opinion that salicylic acid was of no use in gonorrhœal rheumatism. When the Government allowed the salicylate of soda, it also was tried, but with the same disappointing result. He thought that, on the whole, the remedy which he had found most successful in gonorrhœal rheumatism was iodide of potassium; but his experience was that the disease was always very protracted, and never accompanied by cardiac complication.

Dr Black was of opinion that the remedies useful in gonorrhœal rheumatism were those that were found useful in cases of venereal disease. He thought, therefore, that it was highly probable that gonorrhœal rheumatism was produced by the absorption of the virus into the system, which produced a disease like rheumatism, but which was treated better by anti-venereal than by anti-rheumatic remedies.

Dr James Ritchie had listened with great interest to Professor Fraser's paper. He rose to put a question for his own information. There were few men in general practice who did not meet with cases of acute rheumatism. It had been his custom, in such cases, to commence with full doses of salicylate of soda; but in no remedy had he found so much variation in the results. In some cases it stimulated, in others it depressed. He would like to know if a similar experience had been Professor Fraser's. He would also like to know if he understood aright that when the drug did not take down the temperature in a case of acute rheumatism, Professor Fraser at once concluded that the affection was gonorrhœal. If so, he would like to say that in several of his cases he had got no remarkable reduction of temperature, though the pain was relieved, and in such cases he had investigated carefully for evidences of gonorrhœa and had not found any.

Professor Grainger Stewart thought it would not be well to pass from this subject without getting the experience of their president and some of the older members of the Society in the treatment of this disease. For himself he had been struck by the failure of nearly all treatment. When the fever disappeared, the affection located itself in one joint, and persisted there for a long time in spite of remedies. He was interested in finding that Dr Young had got from iodide of potassium most benefit.

Dr Miller had listened with great interest to Professor Fraser's paper. For the last three years he had had many cases of vaginal discharge under his care in the Lock Hospital, but he had only seen four cases of affection of the joints which could be called rheumatic in connexion with these discharges. In two of these he was convinced that the affection was due to syphilis. The synovitis disappeared quickly under the administration of iodide of potassium internally and fomentations locally. Curiously enough, he had had cases in which there were rheumatic pains in several joints, in connexion with what he might call traumatic vaginitis. In one case in particular his clerk in the Lock had applied an astringent lotion by means of a plug in the vagina, which was not removed till it had produced a profuse vaginal discharge, which was followed by pains in various joints. The plug was removed, iodide of potassium administered, and the patient recovered. He thought this went to show that gonorrhœal rheumatism was not the result of the absorption of any special virus into the system. As to the idea that there were probably several varieties of rheumatic affection of joints which might be discriminated from each other by the effects of different remedies, his experience of rheumatism in syphilitic patients was that quinine, arsenic, and the salicylates were valueless, and that iodide of potassium in large doses proved to be the best remedy. In all such cases it was exceedingly well borne as long as the pain remained.

Mr Joseph Bell's experience of gonorrhœal rheumatism was a somewhat sad one. He had been about the Hospital since 1854, and both there and in private practice had had very many opportunities of seeing gonorrhœa. He had during these years looked carefully, but had looked in vain, for a case of gonorrhœal rheumatism which he could distinguish from a case of ordinary acute rheumatism. He should like to ask Professor Fraser if, in his cases of rheumatism where salicylate of soda had proved successful, he had looked for evidences of a urethral discharge.

The President said that while gonorrhœa was a very common malady, he must say that gonorrhœal rheumatism was in proportion extremely rare. Again, all cases of discharge from the urethra followed by symptoms of joint affection were not necessarily gonorrhœal. A urethral discharge was a very common premonitory symptom of an attack of acute gout, a urethritis probably due to an excess of uric acid in the urine having occurred. Many patients, when they saw such a discharge appearing, and knowing that there was no ordinary cause, saw at once that they were in for a visit of

their old friend. There were certain features which enabled them to recognise gonorrhœal rheumatism as differing from an ordinary rheumatic attack. The first was, that there was a gonorrhœa, not usually in its acute stage, but in its period of decadence, one, too, which had been probably neglected—the prostatic portion of the urethra being that in which the disease seemed to linger, and from which the other symptoms seemed to proceed. The second was that it only occurred in males. So far as he knew, the distinctions were best brought out in a paper—the most complete on the subject he was acquainted with—by Rollet in the *Annuaire de la Syphilis* for 1859, edited by Diday and Rollet. This writer showed that the knee-joint was most liable to be affected. There was an effusion into it of a somewhat turbid fluid containing flocculent material, generally disappearing, and rarely passing on to suppuration. Other cavities than the joints might be affected by a similar effusion—for example, the chamber of the aqueous humour. The tendinous sheaths and fibrous aponeuroses were also affected by the disease; while the nerves, the endo- and pericardium, the cerebral and spinal meninges, according to Ricord, may be affected. The urine was rarely so much charged with acid as it was in acute rheumatism or gout. There was also the presence of a small quantity of albumen, and likewise of phosphates, in the urine, and the urine itself tended to undergo decomposition rapidly, a thing which did not usually occur in ordinary rheumatism. The President had met with a small proportionate number of cases of gonorrhœal rheumatism, and found the recovery to be almost invariably very slow, and not due to any internal medication. M. Rollet recommended vapour baths and applications to the affected joints. The President had found vapour baths of signal relief, but repeated blistering was of greater service still. Where there was anything like acute effusion, he had drawn off the fluid, and found it to be for the most part turbid. The most fashionable treatment at the present day was a guaiacate of lithia. The old treatment used to be a decoction of guaiac and other woods, so that the guaiacate of lithia might prove useful. In conclusion, if the patient were exhausted or in a highly febrile state, quinine should be given, and if there were much pain, subcutaneous injections of morphia should be employed. Emptying the joint and repeatedly blistering it, along with vapour baths, generally seemed to him to conduce most thoroughly to the recovery of the patient. He should like to ask Professor Fraser one question. From his paper he gathered that the Professor sometimes gave half an ounce of salicylate of soda in twenty-four hours. He should like to know if he had ever tried the effect of the same quantity of bicarbonate of soda in the same time, and what comparatively was the result.

Professor Fraser, in reply, said he was glad that his paper had raised an interesting discussion. In answer to Dr Ritchie, he would say that he did not mean to suggest that if salicylate of soda did not reduce the temperature, the case was necessarily one of gonorrhœal rheumatism. All he said was, that if such were the case after several days of treatment, his suspicion would be aroused that there was a very important cause for the failure, and of such causes gonorrhœa was perhaps the most important. He had not observed such variations in the effects of salicylate of soda as Dr Ritchie had described. He could not go so far as Dr Brakenridge went in considering that gonorrhœal and ordinary acute rheumatism were perfectly distinct diseases. He believed they were varieties of the same affection, in some respects resembling each other so much that several French observers said no difference could be made out. He could not regard any of the reasons Dr Brakenridge gave for his opinion as conclusive. Among them, for example, there was an assertion that the disease was not fugitive. This was not the case in his patients, nor in the majority of the recorded cases. The disease was fugitive at first, but afterwards tended to locate itself in one special joint. The kind of pain, the perspiration, and the temperature curve were, at first, very similar in both diseases. He could not regard Dr Miller's observations as bearing directly on the subject of his paper or on gonorrhœal rheumatism, which was an acute disease with pain, perspiration, and high temperature. None of the cases Dr Miller referred to were really cases of gonorrhœal rheumatism, but only cases of rheumatoid pains in patients with syphilis or with a vaginal discharge. In answer to Mr Bell, he might say that inquiry was now always made, in his hospital cases of rheumatic fever, as to whether the patient suffered from a urethral discharge or not. It had not occurred to him to use the bicarbonate of soda in the way the President had asked about, as he considered that sufficient data already existed to judge of the value of the alkaline treatment in acute rheumatism.

IV. *Dr Brakenridge* then read NOTES OF A CASE OF SEVERE AND CHRONIC JAUNDICE, contributed by Dr John Wortabet of Beyrout.

V. *Dr Carrick* of St Petersburg then read his paper on KOUMISS, OR FERMENTED MARE'S MILK, AND ITS USES IN PHTHISIS AND OTHER WASTING DISEASES.

The President was sure the Society was greatly indebted to Dr Carrick for his extremely valuable, interesting, graceful, and he might almost say poetic paper. The special opportunities which Dr Carrick had of studying this remedy in its native habitat made his paper very valuable and his statements most trustworthy. It would encourage medical men at home to place more reliance on the remedy than they had hitherto done. He should like to ask Dr Carrick if the koumiss retailed here was trustworthy.

Professor Fraser thought that as Dr Carrick had been so mindful of them as to come all the way from St Petersburg to communicate to them his researches and experience of this remedy, the least they could do was to thank him most heartily, and he had great pleasure in moving a cordial vote of thanks to him for his paper. He should like to ask him if there was any method by which the koumiss might be condensed so as to allow of it being brought from the Russian steppes, its native habitat, in order that its benefits might be conferred on sufferers at home.

Professor Grainger Stewart had great pleasure in seconding the vote of thanks to Dr Carrick. He was very much interested in the paper. His experience of the drug retailed at home corresponded to what the paper would lead one to expect, viz., that he got little good from it except in gastric cases.

The President, in communicating to Dr Carrick the thanks of the Society for his paper, said the Society was deeply indebted to Dr Carrick for his interesting, picturesque, and, as he might almost say, poetic communication upon so important a therapeutic and dietetic agent as the koumiss. The very special opportunities he had enjoyed for studying the use of this remedy in its native habitat made every statement he had afforded the more trustworthy, and raised it in their esteem from a mere record of the manufacturer (which in this country has too much been its position in the literature of the subject) to a scientific position, and encouraged those who had listened to his paper to have recourse to its use with a confidence founded not on mere opinion, but on facts, while it encouraged the hope that in Samara, in the steppes of Russia, would be found a new health resort and a new cure which gave promise of results unattainable in the past or at those better known and nearer at home.

Dr Carrick, in reply, thanked the members for the way in which they had received his paper. The koumiss retailed at home was not real koumiss, but fermented cow's milk, which might be valuable in gastric, anæmic, and some wasting diseases, but was of little use in phthisis. Experiments made with it showed that it was not so palatable, and apt to cause indigestion if taken in the large quantities that the fermented mare's milk had to be taken in. The best effect of the koumiss cure were got not only by taking the remedy itself, but by going to the Russian steppes to partake of it there. He was happy to say that he had been making experiments on a small scale in the way of condensing the koumiss, and they had been very successful. He had some of the condensed article in Edinburgh, which he had made last autumn, and which was still perfectly fresh. He should like to ask Professor Grainger Stewart if he had ever tried the koumiss in albuminuria, and if so, what effects he had observed from its use. Some Russian doctors praised it highly in that affection.

Professor Grainger Stewart replied that he had not got much benefit from it in such cases unless in the way of relieving gastric symptoms.

The President said that a medical man, a friend of his own, suffered from albuminuria, and he believed absolutely in koumiss as a remedy for it. He used to get it from the shops, but he now made it for himself, and found it much cheaper and better.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING IX.

Wednesday, 13th April 1881.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Macdonald* showed (1.)—A very large CALCULUS, with a hairpin transfixing it, removed from the bladder of a young woman, where it had remained for fifteen months. It lay with its two free ends near the urethral orifice, the most tender part of the bladder. This showed that the views urged by Dr Hart as to the bladder —viz., its being, when empty, in a state of collapse, and not contracted—were correct, as this foreign body caused no inconvenience until large. He removed it easily by vaginal incision. (2.) A long CERVICAL POLYPUS. The case had been diagnosed as one of prolapsus uteri, and had actually been treated by caustic and a pessary.

II. *Dr Halliday Croom* showed a TWIN PREGNANCY AT THE FOURTH MONTH. The patient, who was four months pregnant, presented all the appearance of a woman in the eighth month of pregnancy. Hydramnios was diagnosed, and while the patient was still under observation she aborted. The amount of liquor amnii was very great. Besides a large quantity which could not be collected, Dr Croom removed about two quarts and a half. The placenta was single, the chorion common, and amnion double. The fœtuses were of the same sex, both males. Patient did well.

III. *Dr Glaister* then read his paper on AN UNUSUAL EXPERIENCE IN PLACENTA PRÆVIA, WITH NOTES OF CASES.

Dr C. E. Underhill thought the Society indebted to Dr Glaister for his interesting communication. Dr Glaister's experience was certainly rare, although he had read in Dr Fordyce Barker's book that he had once met with five cases of eclampsia in one day. He congratulated Dr Glaister on his management of several of the cases, particularly the first one. He was surprised Dr Glaister did not make any mention of the use of Barnes's bags, which plugged and dilated slowly. He was doubtful if plugging the vagina could be depended on as a safe practice in cases of placenta prævia. In an article in the *American Journal of Obstetrics* the result of dilatation was shown to be better than that of plugging the vagina.

Dr Croom congratulated Dr Glaister on the management of his cases. He thought he was quite right in leaving one of the patients alone until she rallied.

Dr Bruce thought the remarkable feature in the cases was their all occurring in such a short space of time. He agreed with the treatment adopted. Barnes's bags were useful in some cases; but where the os was not dilated enough to allow of their introduction, he would plug the vagina.

Dr James Young said that he had met with comparatively few cases of placenta prævia. In certain circumstances he adopted treatment by plugging, but dilatation by means of Barnes's bags was the correct one, as it not only arrested hæmorrhage, but enabled the accoucheur to deliver the patient very speedily and thus save life, which, in such cases, is so frequently imperilled.

Dr W. L. Reid, Glasgow, had listened with profit to the paper. He wished to ask as to the effect of the separation of the placenta, and to hear whether it was effectual in stopping the hæmorrhage. As to the resuscitation of the child, he practised Schultze's method, and had found it most satisfactory. He had seen a case in Schultze's own practice where it had been used for an hour with a successful issue. If you wait for the cervix to dilate, you may wait too long; the cervix, when the hand is carefully dilating it, yields in a quite remarkable way.

Dr Macdonald agreed in the value of the paper. Unusual cases do run together. He agreed with Dr Reid in regard to the use of Schultze's method in opposition to Sylvester's, though he sometimes combines them. In dealing with placenta prævia a man must act according to his lights and with the materials before him. The more he saw, the more he was satisfied that if the case is seen in time, and the hæmorrhage goes on, we ought to go on at once to delivery, because waiting for dilatation or till the full time of labour is a serious risk. Barnes's dilators can be passed through a very small os. He had seen plugging on many occasions, and he did not think we could rely on it to any great extent. There is no treatment for placenta prævia but delivery. Of all the methods of doing this, the use of Barnes's dilators, with delivery as soon as possible, is the best.

Dr Glaister said he was pleased to come, and was pleased at the reception his paper had met with. He had come because his cases occurred so frequently and so close together. Every case must be delivered on its own merits, and in each case we must deal with the facts as we find them. He had not bags at hand in any of the cases where they might have been of use. In the third case the plugging was not effectual, and he proceeded to delivery, and the child was only lost because the os remained so rigid.

IV. *Dr Halliday Croom* then read his paper on A COMPLICATION OF OCCIPITO-POSTERIOR POSITION, which appears at page 1078, vol. xxvi., of this Journal.

Dr C. E. Underhill had listened with great interest and satisfaction to Dr Croom's graphic contribution to the pathology of childbirth. Of course all were familiar with occipito-posterior positions, but the merit of Dr Croom's paper consisted in his pointing out that they were sometimes associated with vaginal injury of a particular kind and special position. This was a new observation. The connexion between occipito-posterior positions and the ischial spines was long ago pointed out by Tyler Smith, and Dr Croom had associated misplacement of the ischial spines with this particular lesion. It was shown in the paper to occur apart from the use of the forceps. It was doubtless caused by pressure. The paper was interesting and valuable.

Dr Bruce thought the paper interesting. There were no bad effects stated as resulting from this injury ; and such being the case, it was questionable whether practitioners ought to examine their patients nine days after delivery to see if such a lesion existed.

Dr W. L. Reid was deeply indebted to Dr Croom for the information contained in his paper. A fortnight ago he attended a young lady in her confinement, who had been delivered two years ago, by forceps, of a child, which only survived a few weeks. The medical man in attendance stated that the case was an occipito-posterior one, and that the pressure of the forceps had evidently killed the child. He (Dr R.) saw the case when in the second pregnancy and four or five months pregnant, and came to the conclusion that the pelvis was a small one. He accordingly advised and performed the induction of premature labour at about the eighth month. The position of the head was R.O.P., and became arrested at the brim. He applied his forceps with the perineal curve, and brought it down to the ischial spine, still in the third position. It then jerked round there into the second position, and was ultimately born alive and well.

The President had listened with great pleasure to Dr Croom's paper. The effect on his mind was not so strong, however, as it seemed to be in Dr Underhill's case. The injury described might have been due to the mechanism and the forceps. He could get over the case of the third labour, where there was a tear, and where no instrument had been employed, by supposing there had been a cicatrix, the result of a previous instrumental labour, opening up afresh. Dr Croom had failed to convince him of the innocence of the forceps. There was a tendency to tear where the occiput lay ; and further, the lesion would be more frequently noticed when due to mechanism only.

Dr Croom thanked the Society for their reception of his paper. He differed from Dr Macdonald because (1) the direction of the sinus was down and back, whereas if it had been a forceps lesion it would have been up; and (2) because his experience of the behaviour of old cicatrices was that they softened down and disappeared during pregnancy, and stretched rather than tore during parturition.

V. *Dr More's* paper on THE USE OF THE CATHETER BEFORE FORCEPS DELIVERY, which will appear in a future number of this Journal, was then read by the Secretary.

The President had listened with interest to Dr More's paper, and thought there was a good deal of truth in his statements. Although saying so much, and allowing for all the reasons given, he yet thought Dr More immensely overestimated the difficulty of passing the catheter. They exposed a patient to pass the forceps, and why not to pass the catheter. The routine use of the catheter before forceps was, however, probably unnecessary. He himself sometimes forgot to do it, and had never noted any harm by the omission. Dr More's paper contained new and original ideas, and had been listened to with great pleasure by the Society.

Dr Hart had listened with great pleasure to Dr More's original paper. He had always taught that the catheter should be passed previous to every forceps application. What he had learned from Dr More's paper was, that in some cases it was unnecessary. He hoped they would have further communications from Dr More on this and other subjects.

Dr Elder thought it better to pass the catheter before forceps application. At the same time, he often forgot to do it.

SESSION XL.—MEETING X.

Wednesday, 27th April 1881.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Wm. Turner, Glasgow,* showed a FŒTUS delivered in connexion with the out-door department of the Glasgow Maternity Hospital. It was brought to him by the student who was called to attend the case, and who was present at its birth. From him he ascertained that the mother was a fairly healthy woman, aged 22, and in her second pregnancy. Her former child, 3 years old, is healthy. Labour began at 7 P.M. on the evening of 16th April, and ended 2 A.M. 17th April—*i.e.*, it lasted 7 hours. Child presented hand and foot. Version was performed by the district accoucheur, and the head was extracted with difficulty—(second stage of labour lasted 1½ hours). The child was born alive, but lived only a few seconds.

II. *The President* showed a SUBSEROUS FIBROID removed on post-mortem from the uterus of an old woman who had suffered from general malignant disease.

III. *Dr Wm. Turner, Glasgow,* then read his paper on a CASE OF DELIVERY BY THE BREECH THROUGH A GREATLY NARROWED, FLAT, RACHITIC PELVIS, which appeared at page 44 of this Journal.

Dr C. E. Underhill thought Dr Turner deserved their hearty thanks for one of the best-written accounts of a case that had ever been brought before their Society. The fatal issue was evidently due, as Dr Turner had shown, to septic peritonitis. The patient suffered little pain, and there was no deep injection of the peritoneum, and no injury to the parts. As to the treatment of the case, he congratulated Dr Turner on his success. He had seen one case, some years ago, where he had delivered a living child by turning after forceps had failed. He was inclined to believe that in the flat brim turning was better than forceps, while in the justo-minor pelvis forceps should be employed, as Goodell had clearly shown. In Dr Turner's case forceps would undoubtedly have failed. He congratulated Dr Turner on his excellent practical paper.

Dr Halliday Croom had not been present at the beginning of Dr Turner's paper, but had been pleased with what he had heard. The means at their disposal for the diagnosis of deformity of the pelvis in a woman were threefold. Thus they had (1) measurements, (2) mechanism, and (3) head moulding, to guide them. Now he wished to point out that in a primipara in labour it was difficult to measure the pelvis and observe how the head lay. In primiparæ, therefore, he advocated a trial of the forceps first in cases not so deformed as to require craniotomy. He thought nowadays they attached too much importance to fœtal life. In some cases he thought it better to perforate than to deliver a child at the mother's risk.

Dr Berry Hart had listened with very great pleasure to Dr Turner's valuable paper. The treatment of the case was admirable, and the only point on which he would offer any criticism was on Dr Turner's attempting to flex the head as it passed the brim. The reason the head passed the greatly deformed inlet was owing to its marked extension. In practice he had seen eight cases of flat pelvis where he had interfered, or advised interference, owing to arrest of the head at the brim. In all of them turning was employed; in only one did he fail to extract the child and require to perforate behind the ear. In none of the cases had he a maternal death, and no fœtal death, unless, of course, in the craniotomy case. Some details of the cases were interesting. In one the previous labour had been a face case. Forceps were employed, and a still-born child extracted. Two of the cases were seen with Dr T. R. Ronaldson. In the first of Dr Ronaldson's cases, a face presentation, Dr Ronaldson had applied Professor Simpson's axis-traction forceps, and failed entirely to move the head. Turning extracted a living child easily. In Dr Ronaldson's second case the only two previous children had been born still, after prolonged forceps application. A living and very large child was extracted by turning in her third labour. Dr Simpson had also extracted a living child by turning, where, in a previous labour, craniotomy had been employed. It was often said that forceps should get a fair trial first in every case of head arrested at the brim where cranioclasm was not indicated, as the practitioner could put on forceps better than he could turn. It was about as sensible as saying that if a man had to cross a river he should first attempt to walk over, as he could walk better than he could swim. Any one who could turn even badly would succeed better by turning in a flat pelvis than if he applied forceps skilfully. Dr Turner's paper was specially valuable on two points. In the first place, a living and average-sized child had been extracted, breech first, through a pelvis with a *conjugata vera* of incontrovertibly 2⅝ inches. In the second place, the proof that the area of the cross-section of the child's head was less than the area of the pelvic inlet showed more clearly than he had seen before the vertical elongation that must have occurred in the head as it passed the brim. Dr Turner's paper was a most valuable contribution to the treatment of labour in deformed pelves.

The President felt that he had little to add to the interesting discussion that had taken place. He agreed with almost all Dr Turner's conclusions. In regard to many cases reported, there always lurked an element of uncertainty so far as the estimation of the conjugate was concerned. We know that even the most accomplished obstetricians could not in the living woman determine the conjugate without leaving a margin of possible error of a quarter of an inch, so that many of the recorded successes had this drawback to our belief in them. But here, with the pelvis before us to measure its dimensions, there could no doubts arise in our minds. Dr Turner's case was one of the most important and accurate cases of the kind that had ever been recorded. Long before Goodell's paper, obstetricians, both in Germany and in this country, had arrived at the conclusion that the shape of the brim should guide the operator in his interference with the head arrested there. In a paper read before this Society in June 1873 he had himself strongly urged this doctrine. Primiparity was a very curious thing, as all knew that a difficult labour in a first pregnancy may be followed by very easy subsequent ones. He would wish to protest against Dr Croom's low opinion of the value of the life of the fœtus, and would recommend him to read Dr Kincaid's paper. They never knew what a fœtus might ultimately develop into. In regard to the results got by turning in flat pelves, his experience agreed with that of Dr Hart. In the course of practice he had seen very many such cases, and had on many occasions delivered successfully by turning. In one very narrow conjugate of 2½ inches, where he had the able assistance of Drs Underhill and Andrew, he got the child through, but still-born. Probably Dr Turner's patient would have lived had it not been for her want of rallying power. Dr Turner's paper raised the question as to whether turning might be substituted for craniotomy. Sir James Simpson's paper on this subject was well known to all. It was defective, however, in not differentiating the mechanism of the cases where turning was unadvisable. Dr Goodell's remarks on the amount of traction admissible were certainly extraordinary. American children must have very strong necks, or Dr Goodell must be physically weak. With much less force than Dr Goodell said he applied, he had seen the neck and spine snap. Traction should always be cautious, and especially well supported by abdominal pressure. Dr Turner's estimate of the pelvic and head areas was remarkably good. It was worth noting, too, that the child's head in this case was an average-sized one, so that the passage of a living child through such a narrow strait could not be referred to the smallness of the head. The Society was greatly indebted to Dr Turner for his able paper.

Dr Turner thanked the members of the Society for the reception they had accorded his paper. He had been much interested in the remarks made by those who had taken part in the discussion, but more particularly in the experience related by Dr Hart, whose cases formed an important addition to those already tabulated on the subject. In regard to suprapubic propulsion as a means of assisting delivery in head-last labours, he had expressed his belief that an extreme amount of force so employed was probably neither safe nor advantageous, that the full advantage of the method could be obtained by a moderate degree of pressure, if well directed. He thought it was very difficult indeed to distinguish with any degree of accuracy the nature of the deformity in cases of contracted pelvis until the child had been born, and that only oft-repeated and careful examinations of the pelvis and of the positions taken up by the fœtal head during labour would enable one to master the difficulty.

IV. *Dr Hart* then read his paper ON SOME OF THE PHENOMENA OF PARTURITION IN THEIR PRACTICAL BEARINGS, which appeared at page 1085, vol. xxvi., of this Journal.

Dr Croom had little to say on the subject. He thought Dr Hart should have laid more stress on the importance of avoiding too frequent vaginal examinations.

Dr Gordon did not think the entrance of air into the vagina during parturition did any harm. He thought the placenta should be got rid of as soon as possible after the birth of the child, and thought that traction on the cord was right. Indeed, if they did not pull on the cord, he should like to know what was its use?

Dr Barbour was most interested in the final remarks as to the expulsion of the placenta when in the uterus and when in the vagina. He thought the hooking back of the perineum good.

The President had listened with interest to the paper. Unlike Dr Barbour, however, he thought the first part of the paper the most interesting. The description of the behaviour of the bladder during parturition was good and valuable. In his practical deductions he agreed with Dr Hart, and was not so little afraid of the entrance of air into the vagina as Dr Gordon was. Dr Duncan had shown that traction on the cord was bad, and an interference with the natural mechanism. His own practice was to turn the patient on her back immediately after the child was born, so as to conduct the third stage with the patient in the dorsal position, because then the entrance of air was effectually avoided.

Dr Wilson had repeatedly known air enter the vagina during the third stage, and no harm ensue. He agreed with Dr Hart as to the management of the placenta, less pulling on the cord.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Composition of Jaborandi.—A new preparation of jaborandi has been introduced in Italy under the name of *pilocarpina sciropposa pura*, which, dissolved in water and applied to the eyes, will cause myosis, which ceases after an hour, when mydriasis will follow and last for twenty-four to sixty hours. Pure pilocarpine and its salts are said to never produce this secondary mydriasis in any dose. Taking a quantity of this preparation and adding a little hydrochloric acid, Dr Albertoni found that most of the substance crystallized. These crystals, being separated and washed with ether, produced myosis only. The non-crystallizable portion, being also applied to the eye, caused mydriasis, resembling in a general way the effects of atropia, and not those of pilocarpine. This new product he calls *anti-pilocarpine* (*Med. Times*, from *Goir. della Saluta*).—*New Remedies*, April 1881.

Euonymus atropurpureus (Wahoo).—I notice in the January *Gazette* an article on "Euonymus at.," from Prof. Henning, which I endorse. Its effects on the liver are as certain as those of "irisin," and more persistent, acting as a sure deobstruent. I have used the remedy, and have rarely been without it since 1851. It is one of the best remedies in the materia medica, when used in small doses, for certain indications, which are, torpidity of the mucous membrane and liver, for hæmorrhoids with torpidity of the peristaltic action of bowels, and in the "erysipelatous diathesis." Consequently it gives tone to the stomach and digestive functions. It stimulates secretion from liver and blood into the bowels, and perhaps cures hæmorrhoids through such action, and in this action proves one of our best alteratives. It is as sure a remedy for hæmorrhoids as any I ever used internally, leaving the bowels in a soluble condition after discontinuing its use. I think it superior to *Cascara sagrada* for overcoming habitual constipation, for this reason: when the action (normal) becomes established its use can be dispensed with, the bowels continuing to move regularly for a long time after, provided you obtain its full effect upon the liver and bowels and their secretions fully established. I have cured some of the worst cases of hæmorrhoids with this single remedy, and but few doses, they being small and often repeated. I find the *Euonymus amer.* to be equal in its effects to *Euonymus atropur-*

purens, and either a special tool for the "vital force" to use in the certain conditions named. Suffice it to say, it is a positive remedy, and should never be left out of our direct remedies, or its direct action forgotten by reliable therapeutists, who study the action of remedies in the system, and the conditions requiring them. (By A. B. Woodward, M.D., Tunkhannock, Pa.)—*Therapeutic Gazette*, March 1881.

PREVENTION OF THE IRRITATING EFFECTS OF ATROPIA.—In the *Cincinnati Lancet and Clinic*, Dr W. W. Seely writes:—It is well known that atropia not unfrequently causes even a vast amount of irritation to the conjunctiva, so great in some cases as to preclude its use. The suggestion made by myself in 1867, of combining a small quantity of some astringent (usually zinc) with the atropia, has remained the only practical solution of the difficulty, and has probably been used by everybody. Since the well-known effect of eserine of contracting bloodvessels has been recognised, combining a quantity with the atropia has been tried, and with a certain degree of satisfaction; but the fundamental action of these two substances, as all know, is the opposite, so the eserine detracts somewhat from the mydriatic effect of the atropia, an effect whose diminution can be poorly tolerated, since in iritis (about the only territory left for atropia) we want the greatest possible mydriatic results. Now, it is surprising what a controlling effect the yellow oxide of mercury has over exactly the state produced by the atropia, and I am in the habit of using it daily in cases of iritis, with apparently the most satisfactory results, quite perfectly overcoming any irritation from the atropine. My experience has not been conclusive, so far as this irritating effect of atropia goes, simply because I have encountered no excessive irritation from the atropia, and hence simply suggest this remedy for trial. *As regards the direct benefit over the iritis, by controlling the calibre of the anterior ciliary arteries*, I am not certain but that some benefit may accrue by the use of the yellow oxide or some other remedy that will diminish the size of these vessels.—*Medical and Surgical Reporter*, May 7, 1881.

NARAUJILLO.—A rutaceous plant, growing wild in the Argentine Republic, where it is called "naraujillo," and which has recently been described as a new species by Grisebach under the name of *Xanthoxylum naraujillo*, has been examined by D. Parodi, whose attention was directed to it through its resemblance to *Pilocarpus jaborandi* in its therapeutic properties, which are those of a sialagogue, sudorific, diuretic, and stimulant. He reports (*Revista Farmaceutica*, vol. xviii. p. 409) that he has separated a substance forming salts with acids, having a decided alkaline reaction, and giving all the reactions characteristic of an alkaloid, which he has named "xanthoxylina." The plant also yielded a hydrocarbon, "xanthoxylene" ($C_{10}H_{16}$), analogous to pilocarpine, a crystalline stearoptene, xanthoxylin, and finally an aromatic essential oil, having an odour between balm and lemon. From the great similarity of this plant to jaborandi it appears worthy of further experiment in a therapeutic direction (*Pharm. Jour.*)—*New Remedies*, April 1881.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

The Cochlea of the Ornithorhynchus Platypus compared with that of ordinary Mammals and of Birds.

—*General Form of the Cochlea of the Duckbill or Ornithorhynchus.*—This cochlea consists of a somewhat curved tube, about a quarter of an inch (6·3 mm.) in length and one-twentieth of an inch (1·26 mm.) in diameter, projecting forward from the cavity of the vestibule, and embedded in the substance of the petrous bone. It is nearly horizontal, and is slightly curved outward.

In section the tube is first oblong, with its greatest diameter from top to bottom, then somewhat triangular, and finally oval, with its greatest diameter from side to side. It terminates in a slightly enlarged rounded extremity, flattened from top to bottom.

Comparison with Typical Mammals and Birds.—In general form the duckbill's cochlea closely resembles that of the bird, and is very different to the spiral cochlea of the ordinary mammal. The two first differ, however, in that the duckbill's is more curved, and curved outward instead of inward, as in the bird. The enlarged apex of the former is rounded, that of the bird oval. The typical mammalian cochlea-tube differs from that of the duckbill in being spiral instead of merely curved, in tapering from commencement to apex, and in being much longer. Lastly, the axis of the spiral cochlea is horizontal, whereas that of the curved one is vertical.

The Internal Arrangement and Minute Structure of the Duckbill's Cochlea.—The interior of the tube is divided horizontally into two scalæ by a partition, the inner portion of which is thick and bony (lamina ossea), the outer thin and membranous (lamina membranacea); a third scala is formed by a delicate membrane (membrane of Reissner) proceeding from the upper surface of the lamina ossea to the inner[1] wall of the tube. The upper and larger division is the scala vestibuli, and this communicates posteriorly with the vestibule; the lower is the scala tympani. These two are united at the apex of the cochlea by means of an oval opening, helicotrema. The third, a small triangular tube, is the ductus cochleæ, or scala media, and this constitutes the membranous labyrinth; it contains the endolymph, and is entirely separate from the other two scalæ, which contain the epilymph. The ductus cochleæ is lined with epithelium, the scalæ vestibuli and tympani with endothelium.

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[1] In describing the position of the parts in the duckbill's cochlea, the median line of the body is taken as the centre; in the spiral cochlea the modiolus or axis.

The lamina ossea is a wedge-shaped mass of modified bone attached to the lower part of the outer wall and the outer part of the floor of the tube. Its inner free margin presents a deep groove (marginal sulcus), the lower lip of which projects further inward than the upper. The lamina ossea does not extend to the apex of the cochlea, and thus allows of the communication between the scalæ vestibuli and tympani.

The ductus cochleæ is triangular in section; the floor is formed by the inner portion (limbus) of the lamina ossea and a strong membrane (membrana basilaris) which stretches from the lower lip of the sulcus to a mass of connective tissue (ligamentum cochleæ) adherent to the inner wall of the cochlea. The inner wall of the ductus is formed of this ligamentum cochleæ, and the outer wall or sloping roof by the delicate membrane of Reissner, which springs from the upper surface of the limbus, and is attached to the upper part of the ligamentum cochleæ.

The membrana basilaris is composed of three fibrous layers; the lower longitudinal; the middle transverse; and the upper formed of very fine transverse fibres. There are two bloodvessels running longitudinally in the lower layer.

The ligamentum cochleæ is a somewhat triangular mass of connective tissue with numerous bloodvessels, which in its upper portion run longitudinally, and with the epithelium form the stria vascularis.

The membrane of Reissner is composed of a delicate basement-membrane, with the endothelium of the scala vestibuli on its upper surface, and epithelium on its under surface; here and there bloodvessels may be traced on it running from the limbus to the ligament, and in some places these vessels form convoluted knots.

The epithelium lining the ductus cochleæ varies according to its position: that lining the membrane of Reissner is composed of a single layer of hexagonal cells; in the sulcus they are rounded; on the inner part of the membrana basilaris and the lower portion of the ligament they are cuboid; on the upper part of the ligament they are very peculiar, and resemble the transitional variety closely packed together. In the deeper part of the layer run numerous longitudinal bloodvessels, and this forms the already-mentioned stria vascularis. The remaining portion of the epithelial layer that lies on the lower lip of the sulcus, and on the outer portion of the membrana basilaris, is developed into the so-called organ of Corti.

The organ of Corti consists of a double row of rods (of Corti) united at their upper ends and separate below; they stand on the membrana basilaris, and with it form a triangular tunnel.

The rods of both rows have cylindrical shafts and enlarged extremities; the upper ends of the inner row are rounded, and fit in corresponding concavities of the outer row. A delicate process projects inward from the upper part of each of the rods, the processes of the outer ones lying above those of the inner.

Rows of hair-cells are arranged on either side of these rods—one[1] to the outer side and three to the inner. Below the three inner rows are situated rows of nuclear cells (cells with well-marked nuclei but no regular cell wall)—the cells of Deiters. Lying on the lower lip of the sulcus is a small mass of nuclear cells, and there is a row of these cells at each of the lower angles of the triangular tunnel.

The inner and outer side of the organ of Corti is formed of modified columnar cells. A reticulate membrane covers the rods and hair-cells, the hairs of which project through certain circular meshes of the membrane.

Covering the limbus, crossing the sulcus, and covering the organ is a mucoid layer, the membrana tectoria.

Nerve-filaments pierce the upper lip of the sulcus and pass to the hair-cells and nuclear cells of the organ.

The organ of Corti, with the membrana basilaris below and the membrana tectoria above, form the lamina membranacea.

The ductus cochleæ commences as a delicate tube, no doubt connected in some way with the saccule of the vestibule. Its termination is very peculiar; instead of ending with the lamina ossea, where the organ of Corti ends, it is continued around the apex of the cochlea to form three-fourths of a circle. Just past the end of the lamina it forms a circular tube; at the other side of the apex it enlarges into an oval chamber (lagena) which terminates at the base of the lamina ossea. This lagena is lined by epithelium, chiefly cuboid, but with one large patch of nerve-epithelium, like the thorn-cells and bristle-cells found in the maculæ acusticæ of the vestibule (*Quar. Jour. of Micros. Science*, p. 379, 1876).

The cochlear branch of the auditory nerve passes through the bone on a level with the floor of the tube, but to its outer side. It gives off lateral branches all along the lamina, and its terminal fibres go to the lagena. The lateral branches pass through a ganglionic mass similar to the ganglion spirale, and then on through the lamina, close to its lower surface, finally perforating the upper lip of the sulcus by a single row of holes (habenula perforata), and entering the organ of Corti, as already described.

Comparison of the Minute Structure of the Cochlea of the Duckbill with that of Typical Mammals.—From the foregoing description the duckbill's cochlea is shown to be so unmistakably mammalian in type that merely the differences will be here noted.

The lamina *spiralis* membranacea increases in width, and so do its component parts, from base to apex of the spiral cochlea; in the duckbills this widening takes place, but not nearly to such an extent as in the spiral cochlea.

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[1] Since presenting this communication I have discovered a second row of hair-cells in this position.

The rods of Corti in the duckbill are not so well developed as in the typical mammal.

The membrane of Reissner in this monotreme presents blood-vessels on its surface with convoluted knots; these I have never found nor read of in this situation in any other mammal. The vas spirale of the ordinary mammal is represented by two vessels in the duckbill.

The course of the cochlear nerve necessarily differs in the two forms of cochlea.

But the great difference is found in the presence of the lagena at the end of the duckbill's ductus cochleæ; this has never been found in mammals, but is found in birds, reptiles, and amphibians.

Comparison with the Bird.—A brief description of the bird's cochlea will be found in my paper *in extenso;* in this abstract I propose only noting the similarities and dissimilarities.

The scalæ tympani in each type of cochlea correspond.

There is no scala vestibuli in the bird, the scala media (ductus) occupying the whole of the upper division of the tube.

The membrane of Reissner and stria vascularis is represented by the tegumentum in the bird.

The lamina ossea corresponds to the quadrilateral cartilage, and the ligamentum cochleæ to the triangular cartilage of the bird.

There are no rods of Corti in the bird; the hair-cells are more numerous, and their component hairs are united together into a spine.

The nerve-fibres pierce the quadrilateral cartilage by numerous rows of holes, instead of one row, as in the duckbill and other mammals.

The lagena, with its macula acustica, is found both in the bird and duckbill, but in the former is a direct continuation of the ductus, whereas in the latter it is connected by means of a constricted tube. Moreover, the ductus of the duckbill makes three-fourths of a turn, but that of the bird is nearly straight.

General Conclusions arrived at by the Research.—Although the outer form of this monotreme's cochlea resembles that of the bird in being nearly straight, yet its internal arrangement is decidedly mammalian.

The general acoustic apparatus of the duckbill's cochlea is not nearly so extensive as that of the ordinary mammal, nor is its organ of Corti so well developed.

Lastly, the duckbill's cochlea possesses an addition, the lagena, which is not found in any other mammal, but which is found in the bird, reptile, and amphibian. Thus it presents a distinct link between the cochlea of the higher mammals and that of the lower vertebrates.

In conclusion, I desire to give my most hearty thanks to the

many Australian friends who, by their zeal in my cause, have provided me with specimens of the ornithorhynchus in such a good state of preservation as to allow of their microscopic preparation and examination.—*Abstract of Paper by Dr Urban Pritchard, M.D., F.R.C.S., Aural Surgeon of King's College Hospital, read before the Royal Society, London,* 9*th December* 1880, *by Professor Huxley, Sec. R.S.*

THE FORAMINA OF THE MASTOID EMISSARY VEINS.—With the object of determining the constancy, size, position, and number of the foramina of the emissary mastoid veins, which furnish a direct communication between the lateral sinus and the venous circulation of the superficial tissues of the neck, and which are occasionally involved in inflammations of the sinus produced by disease of the ear, Dr Orne Green, through the kindness of Dr Whitney, the curator, has examined sixteen skulls in the Warren Museum of the Harvard Medical School. Only those skulls were used which were in perfect condition, and which had also been sawn open, so that both the external and internal openings could be seen, and the foramen be thus proven to enter the sulcus of the lateral sinus. In regard to the position of the foramina, they are always just behind the posterior limit of the mastoid process, but vary much in the height at which they are found, some being quite high up on the skull, and others appearing even on the base. From the examination he found that mastoid emissary foramina existed in all the skulls except one. In the 32 temporal bones of these 16 skulls these foramina were present in 29. The size of the openings varied very much, being about 5 mm. in diameter in 1, 4 mm. in 4, 3 mm. in 10, 2 mm. in 10, and 0·5 mm. in 4. In regard to the position of the external opening, it was opposite the meatus, about the middle of the perpendicular height of the mastoid, in 20; above this line in 2; below this line in 6; and directly upon the base of the skull in 1.—*J. Orne Green, M.D., American Journal of Otology*, vol. iii. p. 96.

A THIRTEENTH PAIR OF CRANIAL NERVES! (Un tredicesimo nervo craniale).—The chief result of these interesting studies, viz., that the nerve of Wrisberg, together with the chorda tympani, represent a continuous unit which nowhere communicates with real fibres of the facial nerve, is not quite new, whilst it had already been found out in the beginning of last year by Bigelow and Spitzka ("Anatomy and Physiology of the Chorda Tympani Nerve," by H. Bigelow, *New York Medical Record*, 17th January 1880; "The Origin of the Chorda Tympani Nerve," by E. C. Spitzka, *N. Y. Med. Rec.*, 31st Jan. 1880), by quite a different method of research. The nerve of Wrisberg is continued uninterruptedly in the chorda, and these together must be considered as a thirteenth cranial nerve. It arises from the calamus scriptorius (dal triangulo aperto del calamo script.) in the fourth ventricle, and its source can be traced to there from the "cordoni laterali restiformi e dal funiculo nervoso innominato," so the nerve unites in itself motor and sensory qualities. In the substance of the pons, its fibres mingle with like fibres of the acoustic, and further on, at its entrance in the meatus auditorius internus; in the ganglion geniculi it neither gives off fibres nor yet does it receive them; it descends in the Fallopian canal with the facial nerve, but separated from it all the way. Then again, under the designation of chorda tympani, it takes an ascending direction. The more intimate results of the research commend themselves for perusal in the Italian, in order to become acquainted with the original and painstaking methods by which the author has, step by step, examining each millimetre with the assistance of a lens and cataract needle used as a dissecting needle for his work, in a watery alcoholic solution, succeeded in supplying us with those highly valuable researches (Dr Gius. Sapolini, Milan, 1881).—Brochure, *Estratte dagli Annali Universali di Medicine*, vol. 255, a. 1881.

RESEARCHES CONCERNING THE REAL ORIGIN OF THE CRANIAL NERVES, GLOSSOPHARYNGEUS, AND THE NERVE OF WRISBERG.—M. Duval has here also preceded Sapolini (see above) in regarding from his own researches the nerve of Wrisberg as having nothing to do with the facial, that the chorda tympani is only a continuation of the nerve of Wrisberg, that these have their origin from a detached root of the glossopharyngeus, so it may arise that taste, smell, vision, and hearing are under the control of one specific nerve. There is nothing said of any functional influence of the nerve on the organ of hearing (M. Duval, *Journ. de l'Anatomie et Physiologie*, October 1880).—Weber-Liel, *Monatschrift für Ohrenheilkunde*, Nos. 3 and 6, 1881.

DIFFUSE INFLAMMATION OF THE EXTERNAL AUDITORY CANAL.—Mr E. Cresswell Baber, M.B., of Brighton, in a paper on this subject, states that the disease must be distinguished from the circumscribed variety where small abscesses form in the meatus. In diffuse inflammation the walls of the meatus swell uniformly, so that often the smallest speculum cannot be introduced. When the swelling subsides slightly, a speculum well flattened at the inner end will show the tympanic membrane recognisable only by its position, the manubrium of the malleus and the light spot being hidden by the thickening, through inflammation of the epidermic layer of the membrane. Free secretion often exudes from the walls of the meatus, without any perforation existing in the membrane. It is most important to diagnose this complication in healing this disease. For treatment, leeching is useful, and care must be taken that the leeches are applied close to the ear. Incision of the inflamed tissues in the meatus is necessary when the case is severe, with danger of the adjacent bone being affected. An hourly injection of five to ten drops of a solution of acetate of morphia (16 grains to the fluid ounce) greatly relieves the pain. In the chronic stage the surgeon should frequently cleanse the meatus with cotton-wool: this is less irritating than the syringe. Glycerine of borax is the best lotion for injection.—*British Medical Journal.*

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

Eczema Genitalium.—Dr Finny, continuing his "Practical Notes on some Local Forms of Eczema," deals with this troublesome variety, and also with eczema ani, often closely connected with it. When eczema involves the whole genital region, including the anus and perineum, it mostly commences at the anus and extends from thence forward. As seen on the scrotum, there may either be much thickening and infiltration, or there may be more or less exudation of a sticky secretion. The subjects of chronic eczema genitalium are either adults or past middle life, at least in the majority of cases. Patients often endure a moderate amount of discomfort in these regions before seeking medical aid, and so it happens that when they do they are often far from well in their general health. They may either suffer from dyspeptic symptoms or from those of nervous exhaustion due to loss of sleep, and to nervous depression as a result of intense itching and the scratching to relieve it. Finny finds lotions often suit better than ointments and gives the following two useful formulæ:—

℞ Lin. calcis, ℥iv.
Ext. bellad., gr. xij.
Zinci oxidi, ʒij.
Glycerini, ʒj.
Aq. calcis., ℥iv.

To be applied at night, after bathing the scrotum in very hot water. During the day, dust with a powder composed of bicarbonate and oxide of zinc and starch. Another formula useful in eczema rubrum vulvæ is—

℞ Lin. calcis, ℥iv.
Acid hydrocyan. dil., ʒiv.
Liq. plumbi subacet., ʒij.
Glycerini, ʒij.
Aq. rosæ, ad ℥viij.

Pruritus ani is often associated with eczema genitalium, and may be its starting-point, and hence it is well to look for fissure or ulcer of the rectum or hæmorrhoids, as unless these, if present, are cured, the treatment directed to the pruritus will fail. In many cases of eczema ani there is a strong gouty tendency, and an outbreak may be induced or aggravated by even the moderate use of malt liquors or port wine. By a regulated temperate dietary, into which fish may largely enter in place of meat, by total abstinence from port and brown sherry, brandy, and malt liquors, and by saline aperients, with colchicum, Finny has reduced the disease to most moderate limits, and cured it by subsequent use of oleate of zinc or ung. hyd. ammoniat. When the nervous system is much depressed, phosphorus, alone or with iron and strychnia, does good; but a complete change and rest from business is often needed to cure.—*Dublin Journal of Medical Science*, April 1881.

NAPHTOL IN SKIN DISEASES.—Professor Kaposi points out the advantages and disadvantages of the tars when employed to remove certain morbid phenomena. He divides the effects of tar on the skin under these circumstances into three heads:—1. The rapid involution of sub-inflammatory states of the papillary layer of the skin, while the paretic and dilated vessels are led to contract under the influence of the tar, which penetrates the epidermis. Thus, in eczema and psoriasis, the hyperæmia and its sequelæ, the excessive epidermis production—the scaling—vanish. 2. The prompt removal of the itching, thus not only relieving the patient, but also removing an indirect cause of fresh outbreaks of eczema through nerve reflexes. 3. A moist gangrene of the most superficial epidermic layer, which is especially desirable under certain circumstances. Against this are to be put their unpleasant colour, their penetrating odour, their effects in soiling and destroying linen and dressings, and also their occasional local and constitutional toxic effects. It occurred to Kaposi that, tar being a compound substance, some one of its ingredients might be found which would possess its virtues without its drawbacks. In the chemical inquiry he had the assistance of Professor E. Ludwig, and setting aside resineon, benzole, and, under the phenol group, carbolic acid, there remained naphtol, which had not yet been therapeutically investigated. There are two isomeric bodies called naphtol, α naphtol, and β naphtol. The latter is the one to be referred to. It possesses the formula $C_{10}H_8O$, is crystalline, but easily pulverized, and then reddish-brown, with a faint odour somewhat like carbolic acid, but sweeter. It dissolves freely in alcohol and in oil. A weak solution in water and alcohol imparts an agreeable pliancy to the sound skin; when stronger and repeated, occasions slight fissures and a delicate brownish-yellow staining of the outer epidermic layers. Naphtol is absorbed by the skin, and excreted, in part at least, as naphtol by the kidneys. It possesses scarcely any smell, either as a solution or ointment, does not stain the skin or hair, and any slight discoloration of the linen washes out. 1. *In Scabies.*—A 10 or 15 per cent. naphtol ointment completely cured scabies in two rubbings, the mites in the burrows being found to be dead when examined microscopically. Kaposi prefers the following formula:—

℞		
Naphtoli,	15.	
Axungiæ,	100.	
Saponis virid.,	50.	
Cretæ, ppt.,	10.	M.

Not only is the scabies cured rapidly, but also the pustules and consecutive eczema quickly heal. 2. *Psoriasis.*—In three well-marked cases, after the first application of a 15 per cent. naphtol ointment, the scales fell off entirely. After the 6th to 8th application the patches were smooth and pale red. After the 16th to 20th—that is, on the 8th to 10th day—the spots were quite white, so white, indeed, that, when compared with the neighbouring and normally pigmented skin, they appeared deficient in colour, as in leucoderma. Naphtol, however, exerts no better effect than other means in preventing the recurrence of psoriasis. But while as effective as chrysarobin, it has none of its drawbacks, and does not induce the erythema and eczema which follows both chrysarobin and pyrogallic acid so frequently when employed to remove psoriasis. One case (out of seventeen treated more or less entirely with naphtol) had thick, rupia-like, heaped-up scales. Arsenic was administered internally, and the left leg treated with naphtol ointment. This in three weeks was well, while the rest of the body remained unchanged. 3. *In Eczema.*—Here it is only suited for those cases in which tar is applicable. The effect of naphtol, both in a favourable and unfavourable direction, is incomparably more rapid than tar. From this results, on the one hand, a speedier cure and termination; on the other, it is needful to watch the effect of treatment more closely than is necessary when using tar. 4. *Prurigo.*—Six patients affected with prurigo (Hebræ) were treated with the application twice a day of a 10 per cent. simple naphtol ointment, without baths or washing with soap. In all the itching lessened and ceased, the eczematous and pustular eruptions on the extremities healed and faded. Especially in one case, where there were numerous pustules, the ointment caused the symptoms to disappear within a week, and made the skin smooth, pliant, and white. One case of lupus erythematosus was cured by the use of a 5 per cent. solution. One of ichthyosis serpentina was benefited; but it was unsuited for lupus vulgaris, epithelioma, and seborrhœa.—*Wiener Medizinische Wochenschrift*, 26th May, 4th and 11th June, 1881.

TREATMENT OF ACNE.—Dr Walter Smith divides cases of acne into three divisions:—1. Those in which retention of sebum (comedo) is a prominent feature. 2. Those in which an inflammatory process predominates. 3. Those in which vascular congestion requires to be specially dealt with. Though not ignoring the influence which constitutional states excite in acne, he thinks many cases can be successfully treated by local measures exclusively. In the inflammatory group, when there is much pus formation he opens freely but gently the little acne abscesses with a small and very sharp knife. To promote absorption of the sluggish copper-coloured tubercles, and stimulate without producing caustic action, he prefers carbolic acid to the acid nitrate of mercury. He applies it by means of a glass rod or stick dipped into the liquefied acid, sopping up any accidental excess with blotting-paper, then covering each carbolized spot with a film of flexible collodion. This both protects from the air, and also, forming a colloid compound with carbolic acid, minimizes its irritant action. At times two or three applications will serve to remove the most disfiguring part of the disease. To expedite the cure it is often serviceable to dust the face at night with precipitated sulphur by means of a puff, washing it off in the morning. If the skin is irritable or inflamed, nothing is more soothing and grateful than to wash the face with rice milk prepared by boiling, say, a teaspoonful of ground rice in half a pint of new milk. This emollient is advantageous where bran or oatmeal tea are useless or cause irritation. Acne on the dorsal region needs and admits of more active measures, as diligent frictions with soft soap, or, what he has found to be a cheap and capital substitute, Hudson's extract of soap.—*Dublin Journal of Medical Science*, May 1881.

LICHEN PLANUS FIRST APPEARING ON THE GLANS PENIS, FOLLOWED BY A GENERAL ERUPTION OF THE SAME.—Bulkley narrates an interesting case, where, in a medical man aged 38, the papules of lichen ruber planus appeared on the glans as irregularly-shaped pinkish purple patches, a third to a quarter of an inch in diameter, with a few small pin-head spots round. The patches were all similar in nature, flat on the summit, and very slightly elevated, and with no induration. The surface was smooth and slightly shiny, without desquamation. In the diagnosis syphilis was excluded, but Bulkley at first regarded it as erythematous lupus. The disease remained confined to the penis for three months; then a perfectly developed lichen planus appeared on the forearms and moderately on the abdomen and chest. The papules on the penis disappeared first, but the eruption lasted in all eight months.—*Archives of Dermatology*, April 1881.

FRAGILITAS CRINIUM.—Dr Walter Smith records two cases of this affection which are interesting, as there was apparent evidence of transmission from one to the other. In the one, a Dr F., aged 26, there was scurfiness of the upper lip and falling off of the hair there which had lasted six or seven years. The hairs varied in length, some mere stumps, some an inch long. In reading, short hairs fell on his book, and stumps came out easily. The skin was scurfy, thick, and reddened in patches, and there was anæsthesia at the right angle of the mouth. In the second case, Dr K., aged 22, brushed his moustache with Dr F.'s hair-brush, and six days after he noticed his moustache becoming thin and the hairs breaking off. In a week it had spread so much that the right half of the moustache seemed as if clipped. The hairs were firmly fixed. There was no scurfiness of the surface. In neither case was the presence of fungus elements determined satisfactorily. The first case improved under the use of an ointment of ammoniated mercury, boracic acid, and vaseline. The second was cured by shaving and inunction with vaseline and oil. In a discussion on the paper the cases were looked on as brittleness of the hair, not trichorexia nodosum.—*Archives of Dermatology*, April 1881.

On the Trichophyton Tonsurans.—After numerous trials of cultivating fluids, Dr Thin found that the only mode was by moistening the hairs containing fungus elements with vitreous humour. When placed in a large drop, or at the bottom of a test-tube containing it, the spores did not grow. The growth observed consisted in the formation of mycelium, which sprouted from the spores in the hairs, and in the formation of spores in the new mycelium. The author thinks that the fact that the spores of the trichophyton will not grow when immersed in vitreous humour, whilst they do grow when only moistened by it, explains why inflammatory exudation from the bloodvessels cures ringworm of the scalp.—*Proceedings of the Royal Society*, No. 211, 1881.

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION

Part Fifth.

MEDICAL NEWS.

PRESENTATION OF PROFESSOR SPENCE'S PORTRAIT.

On Monday, 18th July, a meeting of the subscribers to the portrait of Professor Spence was held at the Royal College of Surgeons. Amongst others present were:—Dr Haldane, President, and Dr Smith, Secretary, of the Royal College of Physicians; Mr Imlach, President of the Royal College of Surgeons; Mr W. Walker, Dr Pattison, Dr Byrom Bramwell, Mr Joseph Bell, Dr Montgomerie Bell, Dr Balfour, senior, Portobello; Dr Balfour, junior; Dr Black, Dr M'Gillivray, Mr Fasson, Superintendent of Royal Infirmary; Dr Linton, the Rev. J. Lowe, Dr Craig, Dr Husband, Dr P. H. M'Laren, etc.

On the motion of *Mr Walker*, Mr Imlach was called to the chair.

The Chairman said they were all aware that there had been a feeling in the medical profession, that after the long and honourable service Professor Spence had rendered to surgical science, the expression of esteem in which he was held by his professional brethren should take a tangible form. For this purpose it was arranged that this expression of theirs should take the form of a portrait to be presented to his family, and a replica to the Royal College of

Surgeons, to be hung in their hall among the illustrious men who adorn its walls. The replica, when it was finished, would be presented at a meeting of the Royal College of Surgeons. He would now call upon the President of the Royal College of Physicians to present the portrait. (Applause.)

Dr Haldane stated that he felt himself much honoured in having been selected as the medium for presenting to Professor Spence a proof of the esteem in which he was held by his professional brethren. The idea occurred about a year ago to some of his medical friends that their feeling of esteem should, as their chairman had said, take a tangible form. After a little consultation, it was agreed that the portrait was the proper form which this mark of respect should take. Without the least effort, and by appealing only to members of his own profession, a sum was very shortly raised sufficient to fulfil all the objects which had at first been aimed at—the excellent portrait which they had at present, a replica to be presented to this college, and an engraving to be given to each of the subscribers. It was no ordinary honour which was being conferred on Professor Spence; for to be held in esteem by such a large circle of friends showed that the man must be in the highest degree worthy of it; and certainly no man was more worthy of such an honour than Professor Spence. From the very commencement of his medical career he set himself to the scientific study of his profession, working first at anatomy, at which he attained almost unsurpassed dexterity. He was glad to see that a representation of Professor Spence's famous dissection of the arteries of the foot would, in the picture now before them, be handed down to posterity. Not only was it anatomy to which he devoted attention, but also to surgical pathology, and latterly, and more particularly, to practical surgery, until he had earned a position as surgeon second to that of no one in the kingdom. It was not, however, only for his professional qualities that he was esteemed, but quite as much for the honourable feelings that had invariably characterized him, and for that kindness of heart which always marked him in putting his services at the disposal of his friends. Without further preface, he begged, in the name of the subscribers, to present Professor Spence with the portrait now before them. (Applause.)

Professor Spence, who was received with applause, said that he felt very much the honour conferred upon him, because, as Dr Haldane had said, it was a very unusual one—one which had not very frequently occurred to others during their lifetime. He therefore felt it the more deeply; and he trusted that, being unprepared for anything like a set speech, those present would not gauge his feelings by the words in which he tried to express them. He could only say that he felt, in the first place, very deeply the estimation of the profession in giving him such a tangible mark of their respect. (Applause.) After alluding to the occasion as one in which mixed feelings came to the surface, Professor Spence went on to state that, considering the honour done to him personally, he took it as a recognition by the profession, in the first place, that in as far as he had been able to do anything, he had done his best to advance the science with which he was practically connected in the surgical department. (Applause.) While he had certainly done a good deal in that department to the best of his ability, at the same time he trusted that he had never done anything which would injure the feelings of his professional brethren. (Hear, hear.) He had never been slow in expressing his opinions and holding them firmly and distinctly. At the same time, he had had respect to the feelings and opinions of others as well. (Applause.) In regard to what he had met with in his career among his professional brethren generally, he could only say that he never met with anything but a feeling of respect and gratitude. And after pretty long experience and practice, and having met a great number of his professional brethren throughout Scotland and in certain parts of England as well, both in consultation and otherwise, he could say that he thought there was no profession towards which one could have a greater feeling of respect, or could have more pleasure than in the feeling which he had at the high status it held. He could not, therefore, but feel gratified when he found such an honour paid him by such a class. There being, he understood, old pupils of his own among the subscribers, it gave him great pleasure to receive such a testimony from them, scattered as they now were far and wide. In regard to the portrait itself, he added that he could only say that he was sure their excellent friend Mr Irvine had done all that he could to make the best possible of a bad subject—(A laugh)—yet, at the same time, he would say that he had succeeded exceedingly well. As regarded the background to which Dr Haldane had alluded, the foot was not his best effort. He liked the hand best; but it was too small to come into the picture, and therefore they took the foot. But one could not himself judge so well of these things as others. The late eminent Sir David Brewster said in regard to his bust that it was not exactly what he saw when he shaved. (Laughter.) Very few people would like their portraits taken under these circumstances, and he would not make that remark. He could only say that he thought the portrait an exceedingly good and beautiful painting. As to its likeness those present were better judges than he could be. He was sure that his family, to whom they had presented it along with him, would appreciate very highly the presentation made that day, and keep it as a memorial of the good feeling of the profession to one who, however much or little he had deserved it, had always had a warm feeling towards that profession, and felt grateful indeed for the honour which had been conferred upon him. (Applause.)

On the motion of *Dr Cadell*, a vote of thanks was awarded to the painter, Mr Irvine; and on the motion of *Mr Joseph Bell*, a similar vote was awarded to Mr Walker and the honorary secretary, Dr M'Laren, for having thus far carried out the wishes of the subscribers.

Professor Spence moved a vote of thanks to the Chairman, and the proceedings terminated.

The portrait, painted by Mr James Irvine, is of three-quarter length, and an excellent likeness. On a table on which the right hand of the Professor rests is the representation, under a glass shade, of the dissection of the arteries of the foot, referred to by Dr Haldane. The frame surrounding it bears the following inscription: — "James Spence, Esq., F.R.S. and F.R.C.S.E., Surgeon in Ordinary to the Queen in Scotland, Professor of Surgery in the University of Edinburgh: Presented to him by Members of the Medical Profession of Great Britain and Ireland and the Colonies." Besides the replica to be presented to the Royal College of Surgeons, each subscriber is to receive an etching by Durand of Paris.—*Courant*, July 19.

FORFARSHIRE MEDICAL ASSOCIATION.

THE twenty-third annual meeting of the Forfarshire Medical Association was held in the Council Chambers, Montrose, on July 14—Dr Andrew Key, President, in the chair. There were present—Dr Johnston, of Kair; Drs Lawrence, Howden, Steele, Watson, Gray, and Urquhart, Montrose; Surgeon-Major Colvill, Lawton House, Arbroath; Drs Dewar and Crichton, Arbroath; Drs Maclagan-Wedderburn and Alexander, Forfar; Dr Lawrence, Brechin; Drs Arrott, Miller, A. James Duncan, MacEwan, Charles Moon, Steele Moon, Macleod, and Sinclair, Dundee; Dr Grant, Broughty Ferry. Professor Smith-Shand and Dr Alexander Ogston, Aberdeen; and Surgeon-Major John Johnston, Army Medical Department, were present as guests.

Dr Sinclair, Secretary, read the minute of last annual meeting, which was approved.

Dr MacEwan, Treasurer, read a statement of his intromissions, which showed a satisfactory balance at the credit of the Association.

It was resolved to hold the next annual meeting at Brechin.

OFFICE-BEARERS.—The following gentlemen, having been duly proposed by Dr Grant, Broughty Ferry, were elected office-bearers for the ensuing year, viz.:—President, Dr Lawrence, Brechin; Vice-Presidents, Dr Mackie, sen., Brechin, and Dr Pirie, Dundee; Secretary, Dr Sinclair, Dundee; Treasurer, Dr MacEwan, Dundee; Council, Drs A. James Duncan, Anderson, Charles Moon, Macleod, Steven, and Steele Moon, Dundee; Local Secretaries, Dr Dewar, Arbroath; Dr Lawrence, Montrose; Dr Mackie, jun., Brechin; Dr Alexander, Forfar.

PAPERS.—*The President* read a very able and interesting paper on "Points of Resemblance between Typhoid Fever and Diphtheria." Many instances from his own experience were mentioned, which, in his opinion, showed very decided similarity between the two diseases in their origin, mode of propagation, and mortality.

A discussion followed, in which Drs Miller, Lawrence, A. James Duncan, Maclagan-Wedderburn, and W. T. Grant took part. A wish was generally expressed that Dr Key's paper should be published. It will soon appear in this Journal.

Dr Johnston of Kair read a report of a case of obturator hernia, operated on unsuccessfully, with some instructive remarks, which were listened to with great attention.

On the motion of the *President*, a vote of thanks was awarded to Dr Johnston.

HYGIENE OF THE INFECTIOUS FEVERS.—The following report was then read by the *Secretary* :—

DUNDEE, *May 7th*, 1881.

A meeting of the committee appointed at last annual meeting to consider the questions raised by Dr Miller's paper on "The Hygiene of the Infectious Fevers" was held this evening. Present —Drs Miller, Pirie, MacEwan, M'Cosh, Steele Moon, and Sinclair —Dr Miller, Vice-President, in the chair. The feeling of the meeting was quite unanimous that some effort should be made to fix safe limits for the periods of incubation and infection in the infectious fevers, with the view of ensuring, or at all events promoting, the safety of the public, and at the same time terminating the conflicts of opinion so frequently occurring in practice at the present time. After a prolonged discussion of the facts submitted in Dr Miller's able and exhaustive paper, and a careful consideration of the experience of the members present, it was resolved to recommend the Association, at the annual meeting in Montrose in July next, to adopt the following limits, as justified by actual experience, and to urge the profession throughout the county to act on them in all cases in future :—

Disease.	Period of Incubation.	Period of Infection.
Smallpox, . . .	14 days.	14 days after termination of scabbing.
Typhus, ...	do.	28 days from inception.
Scarlet fever, . .	do.	7 weeks „
Diphtheria, . . .	do.	6 „ „
Hooping-cough, .	do.	8 „ „
Measles, ...	do.	6 „ „

In view of the fact that the general opinion of the highest authorities, including the late Dr Murchison, is against the infectiousness of enteric fever, except through the medium of the intestinal discharges, it was resolved to exclude this disease from the list. From this conclusion, however, Dr Pirie dissented.

The Secretary was instructed to embody an excerpt of this minute in the circular calling the next annual meeting, and to direct the attention of the members to its conclusions.

Dr Miller moved—"That the Association, having considered the desirability of promoting uniformity of practice amongst its members in their management of the infectious fevers with respect to the period of time during which quarantine precautions should be maintained, recommends as follows:—'When an infectious fever has appeared in one or more members of a household, other members who may have been exposed to the chance of infection by intercourse with them or otherwise should not be removed to a household where there are others liable to be infected until the expiry of the period of incubation shows that they have escaped. Without going to extremes, the period of incubation may, for practical purposes, be considered to be—for smallpox, typhus, hooping-cough, measles, 14 days each; and scarlet fever and diphtheria, 10 days each.' That convalescents from these fevers should be considered as still liable to give off infection until the expiry of time, counting from the beginning of the illness, ranging for each fever as stated below:—

Disease.	Period of Infection.
Smallpox, ...	14 days after termination of scabbing.
Typhus, ...	28 days from inception.
Scarlet fever, ...	7 weeks „
Diphtheria, ...	6 „ „
Hooping-cough, ...	8 „ „
Measles, ...	6 „ „

Dr Dewar seconded the motion.

Dr Arrott moved an amendment to the effect that the evidence which has been laid before this meeting does not warrant any definite conclusion.

This amendment was not seconded.

Dr Maclagan-Wedderburn moved a vote of thanks to the committee for their labours, and suggested that they should continue their investigations, and bring up a report at next annual meeting.

This motion, having been seconded, was carried.

THE BOSTON
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MEDICAL

PUBLICATIONS RECEIVED.

Prof. Dr F. W. Beneke,—Justus von Liebig. James Maclehose, Glasgow, 1881.

W. Braithwaite, M.D., and James Braithwaite, M.D., — Retrospect of Medicine. Vol. LXXXIII. Simpkin, Marshall, & Co., Lond., 1881.

Albert H. Buck, M.D.,—Diagnosis and Treatment of Ear Diseases. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

George R. Cutter, M.D.,—A Dictionary of the German Terms used in Medicine. Baillière, Tindall, & Cox, Lond., 1881.

Gordon Holmes, L.R.C.P.,—A Guide to the Use of the Laryngoscope in General Practice. J. & A. Churchill, Lond., 1881.

E. L. Keyes, A.M., M.D.,—The Venereal Diseases. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

T. J. Maclagan, M.D.,—Rheumatism: its Nature, Pathology, and Successful Treatment. Pickering & Co., Lond., 1881.

Paul F. Mundé, M.D.,—Minor Surgical Gynecology. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

H. G. Piffard, A.[illegible] Medica and Therapeutics of the Skin. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

Alfred Poulet, M.D.,—Foreign Bodies in Surgical Practice. 2 Vols. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

F. A. Purcell, M.D., M.R.C.S., — On Cancer: its Allies and other Tumours. J. & A. Churchill, Lond., 1881.

M. Rosenthal, — Clinical Treatise on Diseases of the Nervous System. 2 Vols. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

Transactions of the American Dermatological Association.

A. Trousseau and H. Pidoux,—Treatise on Therapeutics. 3 Vols. Sampson Low, Marston, Searle, & Rivington, Lond., 1881.

J. Collins Warren, M.D., — Medical Societies: their Organization and the Nature of their Work.

J. S. Wight, M.D., — The Principles of Myodynamics. Bermingham & Co., New York, 1881.

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THE BOSTON
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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Two Cases of Chronic Inversion of the Uterus.* By ANGUS MACDONALD, M.D., Physician to, and Clinical Lecturer on the Diseases of Women in, the Royal Infirmary, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 29th June* 1881.)

THIS lesion is not a common one. In the course of seventeen years' practice I have only had charge of three such cases. I have seen one or two others under the care of Dr J. M. Duncan; but this forms all my experience of the kind.

The subjects of the present paper came respectively from Inverness and Mid-Lothian. In both cases the accident was not detected for some time after delivery, and in both there would appear to have been a great absence of the alarming symptoms of shock which usually accompany the acute lesion. Believing that a relation of the cases, which are typical each in its own way, and differ widely in almost every point, would interest the Society, I have taken the liberty to lay them before you.

CASE I.—*Complete Inversion of Seven Months' Standing. Forcible Reposition after Three Attempts. Complete Recovery.*

This patient was recommended to my care from Inverness by two medical friends there who had seen the case, diagnosed the lesion, but failed in a first attempt to reduce the inversion.

The particulars, as given by the patient's friends, are as follows: —The patient, æt. 22, was married on the 10th of June 1878, and was confined of her first child, a well-formed female, after an illness of 48 hours, on the 7th of February 1880. The delivery was natural, and the head presented. The afterbirth was removed early by introduction of the hand. This was followed by considerable bleeding, much pain, and faintness. The medical attendant stayed by his patient till 8 A.M. on the following morning. On the evening of the 8th the nurse perceived something come outside, and sent for the doctor. The latter pushed up the tumour within the vagina, and much bleeding and depression followed this procedure. The patient gradually recovered, and on the 22d of June proceeded to Inverness, intending to go daily to the Nairn Hotel for salt-water baths.

The bleeding came on so severely when she went to Inverness that she was led to consult a medical gentleman there. He examined the patient, and explained to her that she suffered from inversion of the womb, and at the same time advised a consultation with a medical brother. The result was a complete agreement as to the nature of the lesion. The patient was then placed under chloroform, and an attempt made for an hour on end to replace the uterus. As there seemed no improvement after this effort, the patient was advised by these gentlemen to come to Edinburgh and place herself under my care.

I saw the patient first at 8 Forres Street on the 14th of July 1880. I found the uterus completely inverted, the patient pale and anæmic; but as there was some tenderness still present on the left side of the vagina—the result, apparently, of the manipulations in Inverness—I delayed active interference till the 19th.

I first adjusted Tait's repositors, which were well borne, but proved utterly useless as a means to facilitate reduction of the displacement. Tait's repositors were continued till the 1st of August, when most severe and alarming hæmorrhage set in, which threatened the life of the patient and greatly aggravated her already advanced anæmia. The hæmorrhage ultimately yielded to internal astringents.

On the 22d of August, after the parts had been prepared by air pessary, the patient was placed under the influence of ether and chloroform, and with the aid of Drs Underhill, Playfair, and Elder I proceeded to attempt forcible reposition of the organ.

Counter-pressure was made upon the abdomen by an assistant, whilst Dr Underhill and myself by turns endeavoured to push up the uterus through the stricture. After continuing our efforts for three and a half hours, we began to fear lest the patient should collapse, and desisted. We used the hands only. The vagina tore somewhat posteriorly at the inlet. The perineum remained intact. After the operation the profuse sero-sanguineous discharge stopped. The patient complained of very little pain, and there was no fever and no vomiting, and indeed our patient seemed all the better of the operative manipulations. On examination I found that for several days the body and fundus remained above the level of the external os uteri, thus showing that our attempts at reduction had produced a certain effect. Accordingly, though my first impulse after failure of so prolonged a *séance* was to amputate the uterus, I now changed my mind and resolved to make another attempt at replacement. Accordingly, on the 4th of September, with the assistance of Drs Underhill, Elder, and Turner—Dr Playfair having gone to the country in the interval—I again proceeded to the operation.

After Dr Underhill and myself had made several efforts at reduction with the hand alone, I took the repositor shown, and

using first the broad end and then the narrow, completed the reinversion in a few minutes. On this occasion, from the commencement of administering the chloroform to the complete reposition of the uterus was only one and a half hours. The uterus, without any internal support, kept its place well, and on the 18th of September, when the patient left for her home in the country, it felt normal in situation, only slightly tender. The cervix was well contracted, except at the sides, where it gaped slightly as if somewhat notched.

I am now able to state further that the patient continued to improve, and that she expects to be confined in the middle of August next.

Turning from this extremely satisfactory record, we pass to another which, though partially successful, is at the same time disappointing.

CASE II.—*Chronic Inversion of Five and a Half Years' Standing. Repeated Attempts at Reposition unsuccessful. Rupture of Posterior Wall of Cervix; Passage of Uterus into Peritoneal Cavity. Amputation of Uterus. Recovery.*

Mrs B., æt. 32, married, was admitted into Ward 28, Royal Infirmary, on the 4th of April 1881.

The patient complained of a falling-down of the womb, which frequently projected beyond the vulva, and, indeed, seldom was up for three days at a time, always reappearing on the slightest exertion. Besides this, the patient suffered from severe hæmorrhage from time to time, and from great pain and down-dragging, so that she was barely able to move about.

The patient was confined in the country some five and a half years ago. That delivery was followed by much bleeding, which lasted for three weeks. Convalescence was tedious and incomplete. Three or four months subsequently she found that on attempting to leave her bed the womb constantly protruded, and ever since she has continued in the condition mentioned on admission.

About nine months after her confinement she came under Dr J. Playfair's charge, and he asked me to see her with him. We on two occasions, at an interval of six or seven months, attempted forcible reduction under chloroform, but unsuccessfully. On both occasions we gave a long preliminary trial to the air pessary.

As the bleeding considerably abated after the second effort, and the patient improved in health, we did not deem ourselves warranted in strongly urging amputation, but contented ourselves with merely explaining the nature of the operation and its risks. As the patient then declined to submit to this suggestion, we lost sight of her till the end of last year, when we found her anæmic and suffering so much that she was willing to acquiesce in any procedure which promised her relief. Accordingly she was admitted, as above mentioned, into the private ward attached to Ward 28.

It may be stated that the patient on that occasion was noticed to be very anæmic, of short stature, stout build, with long bones thickened at their extremities; limbs somewhat bent, as if she had suffered from rickets in early life. Temperature normal, and other organs healthy.

On examination per vaginam the uterus was found absent from its proper place, and the vagina occupied by a soft pear-shaped structure, about 2½ inches long, which protruded through the outer os, but when the patient was lying in bed did not appear externally. This tumour bled very readily when touched, and manipulating it caused the patient considerable pain. The finger could be passed all round its base, between the upper end of the tumour and the cavity of the cervix uteri, to about the extent of an inch; but by finger and sound it was demonstrated that all round the base of the tumour the open space between it and the cervix ended in a *cul-de-sac*. It was thus demonstrated that the tumour projecting into the vagina was the inverted body and fundus uteri, and also that the cervix, as happens usually in such cases, was not inverted, but continued in its normal position, only that it was very widely dilated. As the uterus was very soft and considerably swollen, we at first ordered quiet and then hot-water douche twice daily.

On the 20th of April the patient began to menstruate. The quantity was very profuse.

On the 5th of May menstruation ceased. The lower left angle of the uterus was noticed to be somewhat ulcerated. The douche was recommenced, which considerably reduced the bulk of the tumour.

On 9th May, the patient being anæsthetized with ether and chloroform, with assistance of Dr Underhill and other friends, I proceeded to attempt forcible reduction. This was persisted in for one and three-quarter hours, partly by means of the hand, partly by help of the repositor shown; but no change was effected on the tumour other than flattening of its base. It was especially noticed by me that whereas in Case I., after manipulating for a time, there was developed a tendency in the fundus, with deep pressure, to become slightly invaginated, in the present case no amount of pressure could produce an appreciable amount of invagination at the fundus. During this operation the left side of the vagina tore obliquely for about two inches. This was secured by three silver stitches, which were removed on the 18th of May, when the wound was found completely healed. The patient recovered well from this operation. There was considerable bleeding during the operation, but none after it.

On the 29th of May another effort was made to replace the uterus. After half an hour, whilst I was pressing up with the repositor, and Dr Underhill exerting counter-pressure on the abdomen, I felt as if the constriction slowly yielded and the uterus became re-inverted. There was no slip of the instrument, no sense of sudden giving way of parts, as in the case of rupture, so that I was so completely misled as to use the small end of the repositor to complete the operation after pushing up the uterus as far as the large end could carry it. To my great disappointment, I found on examining that the uterus had passed through a longitudinal tear in the back wall of the cervix, and was now, indeed, in the abdominal cavity. This fact was confirmed by Dr Underhill on examination.

I now proceeded to remove the uterus from its unfortunate position. This was no easy task; for though the aperture in the peritoneum had been large enough to admit of the uterus being slowly pushed through it, considerable resistance was offered by it to the removal of the uterus back again through it. Fortunately no large portion of intestine came in the way, and after considerable difficulty I was able to fix the uterus in the grasp of one or two powerful volsellæ, and in that way bring it back into the vagina. That being accomplished, my first concern was to sew up the rent in the cervix and peritoneum. This was done by means of three twisted silver wire sutures, which were cut as short as was considered consistent with maintenance of their hold. The question now presented was, what could be done with the uterus? On trying to invert it with the aid of a finger passed through the lower part of the rent, we found its tissue was so friable that it tore up like wash-leather.

The tissue of the organ was further considerably lacerated by the application of the volsellæ. To leave the uterus dangling in the vagina in its lacerated condition seemed not unlikely to lead to gangrene of the parts, or at least to peritonitis. Besides, though these risks were not to supervene, the patient, in case of recovery, would have been quite as badly off as when she came in to us, and, moreover, had been subjected to two serious operations. It was idle to anticipate being ever able to replace the uterus, as we found that it was both too thick and too lacerable to admit of such. The only means by which complete relief of symptoms could be afforded was clearly amputation. This I resolved to perform at once. A wire ecraseur was passed round the tumour as near as possible at the junction of the cervix with the body, and the muscular tissue nearly all separated in that way; but before we had completed the separation the instrument broke. I was accordingly compelled to complete the amputation with scissors. I divided first the end of one broad ligament, and then another. In connexion with each of these a vessel was found nearly as large as the radial artery, so far as one could judge from feel and from the hæmorrhage. Knowing how difficult it is to secure such vessels by ordinary ligature in a muscular organ, and, besides, knowing that, owing to retraction of the separated broad ligaments, fatal bleeding into the peritoneal cavity had occurred from the Fallopian tube in a case recorded by Dr J. M. Duncan, I adopted a method of arresting the hæmorrhage which at the same time stopped bleeding from the tube and prevented the cut ends of the ligament retracting. This method was to pass a needle carrying a silver wire from the vaginal aspect of the inverted cervix to the peritoneal aspect and bring it back again in such a way as to include the vessel and the end of the Fallopian tube in the loop. This was now carefully twisted tight and cut rather short. The other Fallopian tube and its artery were treated in the same fashion, except that I used two wires instead of one, as I was not so well satisfied as in the other case, after I had tied the first, that I had effectually controlled the hæmorrhage. A drainage-tube was now passed through the cavity of the cervix and fixed in position by a stitch passed through the left labium pudendæ, and the patient was put to rest after receiving a brandy enema.

There was positively no hæmorrhage. There was a little, but not much, tenderness complained of in the lower part of the abdomen, but no distention. The vagina and cavity of the cervix were carefully washed out with disinfectant solutions several times a day. The temperature ranged from 100° in the morning to 101° in the evening, with the exception of one occasion, when it went up to 105°. The discharge from the vagina was very slight.

On the 7th June the ward-book contains the statement that the temperature was normal. The tube was found loose on that day and was removed, as were also the three wire stitches which had been passed through the cervix to control the hæmorrhage. The stitches put into the peritoneal wound could not be felt.

The following is the note of her condition on 26th June:—The patient feels quite well. Her temperature continues normal. Examination per vaginam reveals the stump as a somewhat patulous os. Inversion of the cervix has not taken place. No intra-pelvic effusion can be felt. The line of the cicatrix in the peritoneal tear can be felt, but the most careful exploration cannot detect any sutures.

In further considering the subject it may be advantageous to refer briefly to the—1. Causation; 2. Symptoms; 3. Diagnosis; 4. Prognosis; and 5. Treatment of this lesion.

1. *Causation.*—It is usually an accident occurring at delivery, as in the two cases referred to. When this happens, as pointed out by Dr J. M. Duncan, there are at least four possible ways in which it may occur. Undoubtedly, in relation to its causation, the uterus may be passive, or it may be active; that is to say, the uterus may be in a condition of collapse, or may be actively contracted during the descent.

1*st.* The non-contracted uterus may tumble out of its own accord in obedience to gravitation or bearing-down effort. This forms what is called the spontaneous passive variety.

2*d.* The non-contracted uterus may be pulled out by nurse or doctor in the removal of the placenta, or in consequence of too short a cord, or otherwise. This constitutes the artificial passive variety.

3d. The uterus, all except the area on which the placenta is situated or a fibroid is attached, may be powerfully contracted, and thus the organ may turn itself outside in by a wave of contraction passing along its body. This forms the spontaneous active variety.

4th. The accoucheur or nurse, by traction on the placental area, may invaginate it and begin the inversion. The uterus, treating the inverted placental area and placenta as a foreign body, contracts firmly round its base; that wave passes rapidly over the whole uterus until the whole organ is inverted. This forms the artificial active variety.

But, in addition to cases arising at term, a certain proportion of others follow abortion, whilst some originate in the unimpregnated condition through the influence of polypi or other tumours. With such cases, however, I have no personal acquaintance, and therefore do not stay to consider them.

2. *The Symptoms* of chronic inversion of the uterus are various. The principal are, profuse menorrhagia, pain, and down-dragging. When there is not a profuse discharge of blood, the patient is usually tormented with a sero-sanguineous discharge from the vagina which continuously saps her strength. As a result of the menorrhagia and leucorrhœa, the patient gradually becomes pale, anæmic, and weak, with a distinct tendency to œdema of the more dependent parts. Life is a burden, duty becomes a toil, and the woman, in short, is supremely miserable. In some cases the uterus comes to protrude outside the woman's body, and the irritation to it thereby occasioned adds greatly to her other misfortunes. In most cases, on the first oncome of the accident, there is much pain, alarming hæmorrhage, and shock. In the cases I record these symptoms, though not entirely, are certainly largely absent.

3. *Diagnosis.*—No careful gynæcologist would risk a diagnosis on symptoms alone. A physical examination is necessary. In this connexion it is important to point out, with all the emphasis one can summon, the danger of confounding this lesion with intra-uterine polypus. This has been frequently done, and by practitioners of wide experience and great ability. Indeed, I have never yet shown a case of inversion for the first time to any gentleman who did not think it must be a polypus. That being so, it is of importance to insist, "line upon line, precept upon precept," that this danger has to be feared and obviated. It is not difficult to establish a correct diagnosis; but it needs care and attention. The means of arriving at certainty have been again and again pointed out; still I must be pardoned for recapitulating them.

First, The vagina is occupied by a rounded or pear-shaped body about 2½ inches in length, which, when the patient is laid on her back, does not protrude beyond the vulva, but is completely contained within the vagina. This rounded or elongated body projects through the cervix, which is *widely dilated*, like an intra-uterine polypus. The tumour, when touched, bleeds very readily, and, I should point out also, is more or less sensitive when touched or pricked, whilst a polypus is not. Frequently manipulation produces contraction in the uterus, which makes it rounder and harder. Then the finger or sound can get to the reflexion of the body of the uterus from the upper end of the cervix all round, and find the way impeded by that reflexion, so that a sound can nowhere pass over an inch. If at any point the sound passes 2½ inches or more, the conclusion is tolerably certain that we have got to deal with a polypus.

By double manipulation, with the aid of chloroform and of sound in the bladder if necessary, the uterus may be proved to be absent from its normal situation, as the finger in the posterior vaginal arch or in the rectum may be usually brought to meet that in the abdomen over the base of the tumour, bringing out in that way that the uterus is absent and that the upper part of the tumour is cup-shaped. If need be, this manœuvre may be aided by dragging down the uterus with the hand or with the assistance of a volsella, but the hand is usually sufficient for this purpose. When this is done it is easy to make out the cup-shaped upper part of the tumour and the absence of the uterus from its proper situation. The finger passed into the rectum now enters easily into the cup at the upper end of the tumour.

A good deal of the tendency to error in diagnosis as well as in treatment of this lesion depends upon the persistence of erroneous views as to the ordinary condition of the cervix and the site of stricture in regard to this lesion.

It is constantly *assumed* by the inexperienced in these matters that the cervix is inverted along with the rest of the uterus; and accordingly, when they find a gaping cervix surrounding the base of an ovoid tumour which occupies the upper part of the vagina and projects from the gaping cervix, they at once jump to the conclusion that this must be an intra-uterine polypus. Now, it ought to be known that the cervix uteri seldom or never partakes in the inversion of the organ. The body and fundus are inverted, but the inversion ceases at the inner os. The cervix maintains its normal position, is wide and patulous, so that there is seldom any difficulty in crowding the entire inverted body and fundus into its cavity so that the fundus is above the outer os.

The greatest difficulty is experienced in dilating that part of the body which would naturally have been immediately above the inner os, but which in this case is, of course, situated immediately below it. It is here that that stricture takes place, and it is here that the great difficulty of reposition is experienced. It is easy enough to invert the cervix by dragging down the uterus, when the whole organ becomes completely inverted; but when the uterus is pushed back, it is found that the cervix at once becomes reinverted.

It is lamentable to find how, even in the best and latest text-books, such as Courty's, this old error in regard to the cervix is retained. At page 727 of the last edition of his *Traité Pratique des Maladie de l'uterus*, &c., Courty says, "Dans l'inversion complète et chronique, les vrais obstacles à la reduction sont, la contraction et la dureté du tissu utérin, la constriction et la rigidité du col, la mobilité de l'utérus, et surtout le défaut de fixité du col."

The true state of matters is ably pointed out by Dr J. M. Duncan in his paper on "Inversion of the Uterus," *Edinburgh Medical Journal*, page 769, March 1877. In all the cases observed by me, certainly there was no stricture in any part of the cervix, which was large and patulous throughout. The stricture was always experienced in that part of the body immediately beyond the cervix, and seemed due to the advance of the normal involution. All talk, therefore, of facilitating reduction by notching the cervix is wrong and misleading.

4. *Prognosis.*—The anticipation of health with chronic inversion is bad in the extreme. The patient is rendered sterile, she is unable to perform her conjugal duties, she is constantly tormented by down-bearing pains, is perpetually exposed to attacks of menorrhagia, which alternate with profuse thin sero-sanguineous discharges.

In the first of my two cases the hæmorrhage was so intense at the menstruation immediately before the operation that the patient must have succumbed to one or two similar attacks if she had not been relieved. The patient, before I saw her first, was reduced very greatly in strength through the resulting anæmia.

The second case was that of a more vigorous woman. The bleeding in her case was not so severe, yet sufficient to maintain her in a condition of great anæmia, and the pain and distress were so great as to make her anxious to submit to any proposal for relief of her sufferings. With the menopause relief from hæmorrhage comes usually, although, according to Courty,[1] not always.

A few cases of spontaneous reinversion of the uterus are recorded. One undoubted case is given by Spiegelberg (*Archiv für Gynäkologie*, Bd. v. S. 118), after it had been down three months. Several cases are contained in Crosse's great work. Others are mentioned by Meigs, Halch, Rendershaw, in which inversions which had lasted from a few hours to many months spontaneously rectified themselves. There is considerable looseness of statement in the cases, however, with the exception of that of Thatcher and Barre, which lead one to be very cautious in accepting the conclusions arrived at, although, from the nature of the case, they cannot be regarded as incredible. This result is, however, so extremely rare as to be entirely beyond consideration in the matter of prognosis.

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[1] *Loc. cit.*, p. 721.

It is strange that seldom or never any portion of bowel is met with in the cavity of the inverted uterus, and that adhesions between the opposing peritoneal surfaces are so uncommon. It will be noticed that notwithstanding the frequent attempts at reposition to which Mrs B.'s uterus was subjected, there was not a trace of adhesion between the opposing peritoneal surfaces, nor any trace of plastic lymph thrown out upon them. This is pointed out by Spiegelberg in the account of two cases of amputation by elastic ligature lately recorded by him. Even after this slow method of amputation the peritoneum remained free from inflammatory action. The fear of strangulation of intestine or the fear of injury to bowel in a case of amputation is, therefore, slight in the extreme.

The results that may be expected from treatment are, on the whole, good, but not nearly so good as some authors, such as Emmett, would lead us to expect. It is perfectly comical to notice this author in his work, pages 435–438, asserting magniloquently that no chronic inversion ought to be given up, when of four cases recorded by him he himself only managed to reduce one. It will be noticed that one was reduced by Dr Thomas, another by Dr Nöggerath, and a third he failed to reduce, and contented himself with sewing it into the cervical cavity and leaving it there.

I have examined the literature of attempted replacements of the inverted uterus with some care. I need not give the names, as that would lead us too far; but the cases are collected from all sources I could find. They include the practice of continental, American, and British gynæcologists, so far as one could gather from reports in journals.

The cases of chronic inversion so collected amount to 66 in number. Of these 66 cases 22 were failures,—that is, they either could not be reduced or the patients died a few hours or days subsequently to the reduction,—and 44 were successes. There were thus 33·3 per cent. of failures and 66·6 per cent. of successes.

I have purposely avoided saying anything regarding the results of acute inversion. That is no part of my present theme. It may be mentioned in passing that the immediate risks from shock, bleeding, gangrene, etc., are very great indeed, and lead, as pointed out by Crosse[1] and others, to a fearful mortality. Thus Crosse states that of 109 patients whose histories he was able to gather, afflicted with inversion, 72 died a few hours after delivery, 8 before the end of a week, and six within a month.

Treatment.—When we proceed to consider this head we en-counter no end of proposals. But they are all capable of being grouped under two heads:—

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[1] *Transactions of the Prov. Med. and Surg. Association*, vol. xv. p. 340, 1847.

1. Methods of replacement.
2. Methods of amputation.

For long it was deemed impossible to replace a chronically inverted uterus by any means, and such women as became victims of the accident at delivery and outlived its direct consequences without the uterus being immediately replaced were abandoned to their fate.

Dr White of Buffalo (*American Journal of Medical Sciences*, vol. xxxvi., 1858, page 13), by the record of his experience in a case in which the uterus had been down seven days, and another in which the uterus had been down for five months, was perhaps the first to give a decided impulse in the direction of attempting the systematical reduction of the chronically inverted uterus. One or two others in Europe had succeeded in reducing chronic inversion before White, for Valentin (*Revue Médicale Chirurgicale*, 1847) records a case successfully reduced by him after sixteen months; Bassier of Lyons (*Archives Générales de Médecine*, 1852) another after eighteen months; and Canney of Bishop Auckland, England (*Medical Times*, vol. ii., 1852), one of five months; and it would appear that in America even White was preceded by Quackenbusch. Still the record of White's cases and method appears to have been the starting-point in this mode of treatment, and to have encouraged gynæcologists to persist much more than they had been wont in efforts at forcible reduction in chronic cases.

Since that time numerous methods have been proposed for fixing the uterus and directing the force for reposition. Many of these methods scarcely deserve the name of special methods. The essentials of a good method are one that is safe, that gives proper support to the cervix and pelvic attachments of the uterus, and that tends to dilate the constricted part, viz., that portion of the uterine body abutting upon the inner os. The one hand of the operator in the vagina, pushing up the fundus, and the other hand steadying the cervix and endeavouring to dilate as far as possible the cup-shaped stricture formed by the base of the tumour, is perhaps the safest, if not also the most successful method. It needs perseverance and patience. An air pessary such as the one shown, introduced into the vagina, and then dilated and left there, is a good preparation, and makes the vagina roomy, thus facilitating the manipulations of the hand which is pressing up. The want of room compels it always to act at great mechanical disadvantage. Only a small amount of the operator's force is utilized. Besides, the hand is constantly getting cramped in its constrained position, which still further tends to impede progress. This plan was originated by Dr Tyler Smith, and in his case was successful in reducing a case of twelve years' standing. It has been also successful in some other cases, such as those of

Teale,[1] West,[2] Backenthal,[3] Courty,[4] Schrœder,[5] Grassi,[6] and A. C. Tyler.[7] But it is not without danger. In one case recorded by West it led to fatal peritonitis.

I tried it thoroughly in both the cases I have here recorded, and in another which I have as yet failed to reduce. But it had no appreciable effect as a repositor. Latterly I merely employed it to give space in the vagina as a preparation for operation. It has one unfortunate peculiarity—the patients simply abhor it. One after another have told me they would submit to anything rather than the bag because the distress it occasioned was all but unbearable.

Courty lays much stress upon a method adopted by him in a successful case. This consisted in pulling the uterus well down outside the vulva, and getting the fingers hooked through the rectum into the cup-shaped hollow at its base. By this means he was able to maintain by the rectal hand good counter-extension, whilst the rectal finger favoured dilatation of the stricture. I have tried it often, and cannot see the advantage in it which its author claims. Nöggerath of New York made the suggestion of endeavouring to reinvert by indenting the uterus at the opening of one or other of the Fallopian tubes, where, according to the conical development of the muscular fibre, it might be expected to be more easily invaginated. It appears an excellent suggestion, and, so far as I can make out, is likely to be very valuable in cases immediately after delivery, but it would appear of little advantage in chronic cases. Cup-shaped repositors to aid in inversion are very numerous.

The one shown is as good as any other, I believe, but they all need care in their application. I completed the reduction of my first one with this instrument. It is simply a straight rod of wood, the ends of which are expanded into two cups of different sizes. The larger is intended to aid in the inversion until the fundus is about as high as the inner os, and the smaller one is meant to complete the operation, as it can pass through the inner os. It is not to be forgotten that such an instrument may be dangerous, even though we had not the record of my second case to enforce that lesson. White originally used a rectal bougie to aid in pushing up the fundus. A repositor with a cup-shaped extremity and a pelvic curve, successfully applied to the inverted organ by Dr Aveling by means of elastic pressure, is figured in volume xx., page 126, of *Transactions of the London Obstetrical Society*. Repositors have been made to be applied by pressure communicated from the operator's breast, with spiral stems, so as to avoid putting forth undue force.

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[1] *Medical Times*, August 1859.

[2] Duncan and West, p. 228.

[3] *Zeitschrift für Geburtskunde*, Bd. xv. S. 313.

[4] *Annales de Gynecologie*, October 1878.

[5] *Berliner Klinische Wochenschrift*, 1868, No. 46.

[6] *Centralblatt für Gynäkologie*, 1877, No. 12. This case was only partially inverted, and ended fatally.

[7] *American Journal of Obstetrics*, p. 578, 1878.

The necessity for using first a larger and then a smaller cup has been attempted to be obviated by having a movable bottom in the repositor, which at the same time is provided with an apparatus for exerting counter-extension. This repositor is applied so that the fundus uteri is received into the cup, whilst the other end is applied to the upper end of the uterus, and then the larger cup is made by suitable mechanical screw arrangements to push up the fundus as far as it can. After that object is effected, while it maintains its position, the movable bottom is propelled onwards to complete the reduction. This certainly is an ingenious method, and is the offspring of Dr Byrne of Brooklyn (*New York Medical Journal*, October 1878), but to any one who has had experience of such matters many practical difficulties as to application and otherwise suggest themselves. This instrument is reported as having been successful in two cases.

Mr Lawson Tait (*Obstetrical Journal*, vol. vi., p. 555) proposed a series of repositors, which I show you. His idea is a good one. It is to apply cups of successively diminishing size to the fundus uteri, in order to tire out the muscular resistance by small but continuous amounts of elastic pressure. I procured them, and tried them faithfully in two cases. You will notice that the cup of the stem is applied over the fundus uteri, that there are holes in the stems through which elastic bands can pass, and that these are attached before and behind to a belt passed round the woman's belly. They are easily applied, they are well borne, and they are theoretically correct. But practically, even where used with rubber bands much stronger than those which Mr Lawson Tait recommends, they are positively useless. In my experience they did no good, although I must in justice state, also, they did no harm. I was the more disappointed in this inasmuch as I undertook their application with high hopes, as the theory is so excellent. Mr Tait found his repositors successful in one case of ten weeks' standing. Dr Matthews Duncan, in one case, was bold enough to incise longitudinally the muscular tissues of the upper part of the body of the uterus, which is the part that gives, as I have already explained, the greatest resistance. This patient did well, and, to my knowledge, has since been delivered safely.

Dr Barnes,[1] apparently believing that he incised the cervix, records a successful case which was essentially the same, to my reading. It would appear that Dr Barnes began his incision in the muscular tissue of the cervix, but that as he attempted to invert the uterus the muscular tissue tore into the lower part of the body, and that he was thus successful. The same is true of the case of Dr Wilson, Greenock (*Lancet*, 23d June 1877).

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[1] *Medico-Chirurgical Transactions*, vol. lii. p. 193.

I have thus drawn attention to the leading adjuncts to the forcible reposition of the uterus. I am fully persuaded that the best method of operating is:—

1*st*. To prepare the parts well with the air pessary, but not to continue that too long, on account of the danger of irritation it may set up, and the pain and distress it occasions. This may succeed alone—it has on many occasions.

2*d*. But if this method fails, after having the patient well anæsthetized, efforts should be made, prolonged and steady, by manual pressure from the vagina and counter-pressure from the abdomen, to reduce the organ. The counter-pressure may be made by an assistant, who may also endeavour to flatten out the cup by pressing on the outer sides of it. The reducing pressure, it appears to me, should be made on the fundus, after it has been well squeezed, so as to force out as much as possible of the blood it contains, to reduce its bulk as far as possible. These efforts are to be prolonged until the uterus is reduced or until the patient's condition compels us to desist. It is perfectly astonishing how little reaction usually follows such an operation. If the uterus stretches and the fundus is easily indented, the case may be looked upon as favourable.

3*d*. A repositor may be used cautiously to complete the operation. It enables the operator to economize his force, as his hand cannot be applied advantageously in a mechanical point of view. But much care must be employed to avoid exerting too much force, and to make certain that the counter-pressure is perfect. Even under deep anæsthesia, counter-pressure is much more easily effected in some cases than in others.

In the second case recorded by me I cannot help feeling that too great force exerted through the repositor, with perhaps imperfect counter-pressure, may have led to the rupture. Still, the longitudinal direction of the tear being in line with, and not at right angles to, the direction of pressure, would rather indicate that the tear was due, partly at least, to a natural deficiency of tissue. But my second case bears the strongest evidence in support of the contention that all inversions are not capable of forcible reposition.

Any one who looks at the thickness of the chronically inflamed fundus and examines the friability of its tissues will, I feel assured, at once allow that no amount of force would have pushed this mass safely through the constricted body. In the act of reinversion it seems to me that the fundus must have torn asunder, even had we been able to pass it through the lower part of the body.

In those cases in which, after a fair amount of well-directed effort has been employed with hand or repositor or both, and the only result is flattening of the base of the tumour without appreciable ascent of it, I am of opinion that the operator is bound to consider very carefully how long he should continue in his efforts at forcible reduction.

Amputation of the Uterus.—In case of failure to replace inverted uterus, if the symptoms dependent upon the lesion are of a threatening character, the only means to secure permanent relief is amputation of the organ. This procedure doubtless mutilates the patient, and is in itself fraught with considerable risk. But we have to bear in mind that chronic inversion of the uterus, as a rule, gives rise to much annoyance, and it becomes a continual source of distress, whilst the accompanying hæmorrhage may at any time jeopardize the patient's existence. In those cases, however, which give rise to only a moderate amount of bleeding and little inconvenience otherwise, it is not advisable to recommend amputation. Measures of a palliative nature should be employed, particularly rest at the periods, with ergot and astringent medicines, such as gallic acid. The leucorrhœa and uterine congestion are largely relieved by the hot douche. Iron in some form, as well as other tonics, are to be given between the periods.

The results of amputation are not so unsatisfactory as is usually held, however. At one time it was deemed an operation that could not be undertaken on any consideration. The record of reported cases does not show so specially bad statistics. Duncan and West, at p. 231, give a table of amputations of the uterus, of which 42 recovered, 15 died, whilst in two the operation had to be abandoned. This enumeration, as is evident from the accompanying bibliographical list, does not include a great many important recent cases, the bulk of which were successful. When those cases recently reported in the medical journals are added to the statistics of West and Duncan, we find 165 cases, of which 124 were successful and 41 ended fatally from amputation, giving a percentage of 33·06 failures.

The most imminent danger arises from the risk of the cervix becoming spontaneously reinverted. It will be recollected that I insisted in this paper that in ordinary circumstances the cervix uteri is not inverted in a case of chronic inversion of body and fundus. There is thus a marked tendency in this part to retain its natural position, even if the rest of the uterus is inverted.

At the moment of amputation the cervix is inverted along with the body and fundus as a result of the necessary downwards traction exerted upon the uterus to facilitate the operation. When the organ is amputated, the inverted cervix is at liberty to obey its own tendencies, and so is very apt to reinvert itself. But in so doing it carries with it the cut section into the abdominal cavity, and if that section is the site of any putrescent materials or sloughs, we are exceedingly apt to have peritonitis septica set up. It is important, then, if we cannot prevent reinversion of the stump, to take measures for draining its cavity, and also to adopt in amputation such a method as shall be least likely to carry septic matters into the peritoneal cavity.

But the next great danger is bleeding. That, I am satisfied, can be perfectly well guarded against with a little care in amputation. While I regard the ecraseur as sufficient for the arrest of the bleeding in the muscular wall, two arteries in relation to the two broad ligaments ought to be carefully secured, as also the ligaments themselves, by some such method as I adopted in my second case. I feel very strongly convinced that the use of the galvano-caustic wire or the Paquelin's cautery, or even the ligature, as they produce a great deal of dead tissue, add greatly to the risk of septic infection through inversion of the cervix, and that some modification of the knife and ecraseur will be found ultimately the safest method of procedure. The danger of including a portion of intestine in the section is exceedingly slight, inasmuch as in cases of chronic inversion it is extremely rare to find any portion of the intestine in the cup of the uterus. I would therefore be inclined to recommend the use of the ecraseur down to the peritoneal coat. Then I should open the peritoneal sac and complete the amputation by scissors, taking care that the Fallopian tube is prevented from retracting, and the large vessels in relation to it prevented from bleeding, by firmly twisting a wire noose over it, as in my second case.

But many methods are used, and with varying success. M. Courty[1] and Spiegelberg[2] have both used the elastic ligature in two cases with success. The uterus falls off in the course of eight or ten days. M. Courty states also that one of his pupils successfully amputated a uterus by the same method. The galvano-caustic wire has also been used on various occasions. Spiegelberg, Veit, Nyrop[3] have each used this plan. In the case of the latter the patient nearly lost her life from pelvic suppuration. Courty, after trial of this method, expresses himself as averse to it. Good success has followed the ecraseur alone, especially in the hands of Drs Greenhalgh and Godson.[4] An ordinary stout ligature to transfix the stump and tie it in two halves has also been frequently employed. The stump is so thick that it is difficult to make certain that hæmorrhage shall be entirely absent, and, moreover, there is much tissue that is thereby killed, and great danger, therefore, of septic results in case the cervix becomes reinverted. Still we find some prefer one method, some another. The main points are, to avoid bleeding, to avoid entrance of putrescent matters into the peritoneum, and to disinfect thoroughly.

It is to be hoped that as we gain a better insight into the principles which regulate reposition of chronic inversion—and there must be some reason to explain why at one time a uterus is so easily reinverted compared with another—the necessity for amputation of the uterus will diminish more and more. It would almost appear from the history of repositions that the uterus passed through certain phases when it was very much more easily replaced than at other times. What these phases are, if they exist, and whether they have any relation to the menstrual period, is at present entirely unknown. Something must be discovered to explain how spontaneous reposition can occasionally occur in an organ that resists at another time the most vigorous efforts at forcible replacement. Then, again, we find a uterus that resisted hours of well-directed effort one day, next day replaceable by the gentlest manipulation. On other occasions the history of a chronic reposition shows that next to no resistance was offered by the organ to reposition. If we expect ever to be able to explain these points, we need the histories of every case carefully noted, and every point about them, however trivial, thoroughly encogitated. But this is work still in the future. In the meantime I bid good-bye to the subject, simply stating that in cases of uterine amputation satisfactory results can never be expected except the strictest measures are adopted to disinfect the vagina and stump, and to maintain free exit of any septic matter that may result from reinversion of the cervix.

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[1] *Loc. cit.*, p. 738.

[2] *Archiv für Gynäkologie*, Bd. xvi. S. 233.

[3] *Centralblatt für Gynäkologie*, No. 13, 1877.

[4] *Transactions of London Obstetrical Society*, vol. xix. p. 51.

ARTICLE II.—*On a Case of Cerebral Disease: being Abstract of a Clinical Lecture delivered in the Western Infirmary, Glasgow, June* 10, 1881. By Dr M'CALL ANDERSON, Professor of Clinical Medicine in the University of Glasgow.

ON the 4th June of the present year, a student of divinity, aged 37, was admitted into the side-room of Ward II. with a very unusual train of symptoms, the cause of which it will now be our endeavour to elucidate. One morning, about three years ago, on wakening, he observed that he had a left internal squint; slight at first, it gradually became more pronounced, so that at a distance of 15 feet images appeared one yard apart, but in about four or five months it in great measure disappeared, unless after a bad night's rest. Shortly after this he had for a time some confusion of ideas, and very slight pain in the back of the head and upper part of the spine, which was followed in a few months by drowsiness, to such an extent that he was constantly falling asleep; this drowsiness gradually deepened into a sort of stupor, from which he was aroused with some difficulty. This symptom, too, about the same time to a great extent passed off. About the beginning of the present year he suffered from loss of appetite, indigestion, and occasional vomiting, which confined him to bed for a few weeks, on leaving which he observed for the first time that he had some difficulty in walking. Two months ago he "sprained his left leg," when he took to bed again for a couple of weeks, chiefly, as he says, "on account of the shock which it gave him." Since then the difficulty in walking has been more marked, not on account of any loss of power in his limbs, he thinks, as they seem to him to be "as strong as ever they were," but on account of giddiness, and an inclination to fall, sometimes backwards, sometimes forwards, but oftenest backwards. The day before he hurt his leg he had two "nervous attacks," and while in bed on account of the injury he had eight or ten more, all of which closely resembled, though they were more severe, than one which he had the day after his admission, of which the following is a brief outline:—

About 4.30 A.M., on the day in question, he began to suffer from hiccough and severe frontal headache, with uneasiness in the eyes and tingling in all his extremities. About 8 A.M. he began to expectorate large mouthfuls of clear, sometimes frothy, tenacious saliva. The salivation continued more or less all day, about two hand basins full in all being expectorated. During the attack he vomited once a small quantity of beef-tea shortly after its ingestion, the eyes watered very much, and the eyelids and conjunctivæ were congested, while the pupils, especially the right, were observed to be contracted. The skin at the commencement felt hot, but slowly cooled down. Unfortunately at this time no record of the temperature is preserved, but during his residence in Hospital the temperature was sometimes above the normal, and on the night of his admission was 101·4.

Latterly he has complained of a noise like machinery between his temples, and vomiting has been a frequent symptom, which he himself attributes to constipation which has troubled him all through his illness.

You will observe that he is a tall, lanky, melancholy-looking man, who has a rather stupid, apathetic look, except when he speaks, but he answers questions very intelligently. He has great difficulty of walking for the reason before mentioned, and also because the left knee is almost completely anchylosed, as the result of an inflammatory affection which set in when he was about nine years old, and continued for about half-a-dozen years.

The disease from which he suffers evidently involves quite a number of cerebral nerves: the sixth nerve on each side is paralyzed, as he is unable to turn the eyes outwards; and the third nerve, particularly the fibres supplying the internal recti, is likewise involved, as he is unable to turn the eyes inwards; indeed, the range of movement of the eyeballs is exceedingly limited, and what little power of movement remains is chiefly in a vertical direction. An ophthalmoscopic examination was made by Dr Thomas Reid, who sent the following report:—"*Left Eye.*—Optic nerve slightly oval, major axis vertical, rather pink in colour, and not quite translucent, vessels rather diminished in size, especially veins, with some little irregularity in the distribution of the pigment, *Right Eye.*—Slightly myopic, with a little tendency to congestion."

It will thus be seen that there is no evidence of optic neuritis, a condition so frequently noted in cases of this kind.

Further, as first noticed by the patient two or three months before admission, there is very decided loss of power of the right side of the face—so decided, that one might almost have taken it for a case of Bell's paralysis, such as results from exposure of the side of the face to cold; but that the paralysis of the facial nerve is due to a central lesion is demonstrated by the fact that the muscles respond readily to both currents of electricity. There is, too, a suspicion of implication of the glosso-pharyngeal nerve, as for the last two or three months he has had some dysphagia, especially on swallowing solid food, while the left spinal accessory is completely paralyzed, as shown by the inaction and marked atrophy of the trapezius and sterno-mastoid muscles of the left side, especially the former. The urine, it should be added, though rather pale, and containing a few phosphates, is otherwise normal, and contains not a trace of sugar.

The Seat of the Disease.—A consideration of the symptoms just enumerated leads to the inference that the disease is situated at the base of the brain, and the diagram which is before you, showing the position of the cranial nerves, points to the conclusion that it is situated in the vicinity of the pons varolii or medulla oblongata. (Diagram here referred to at length.)

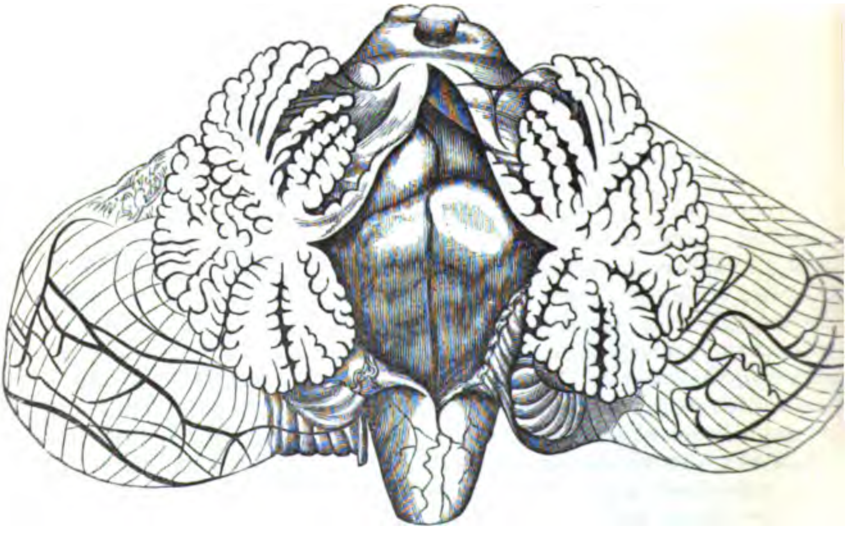
The Nature of the Disease.—With regard to this point there is more difficulty in arriving at a conclusion, further than that the disease is a tumour of some kind. There are certain tumours, however, which, in all probability, we may exclude. Thus it is probably not syphilitic, for, although implication of cerebral nerves, and particularly of the third and sixth, are common in this condition, there is no nocturnal pain, nor is there any history of syphilis, and a most careful examination fails to detect any trace of other manifestations such as are commonly met with in that disease. Nor is it likely to be cancerous, as we find neither hereditary tendency to it, nor any evidence of cancer elsewhere, although the latter point is of no great value as a negative feature, seeing that cancer of the brain is generally solitary. There is, too, a total absence of the cachexia so frequently present in such cases, while the age of the patient is below that at which it is most commonly met with. This is well shown by the statistics of Walshe, who found that of 56 cases of cancer of the brain, 26 occurred between the ages of 40 and 60. It might, however, be of a tubercular nature, for although we cannot trace any hereditary tendency to that diathesis, there has been some elevation of temperature throughout the disease, such as we usually find in connexion with tuberculosis, and there is reason to suspect that the anchylosis of the knee resulted from strumous disease in early life. If not tubercular, it is probable that we have to deal with a benignant tumour of the nature of a glioma or sarcoma.

If our diagnosis is correct little can be hoped for in the way of treatment, and we have therefore to content ourselves with palliative measures, one of which only is worthy of mention, viz., the subcutaneous injection of $\frac{1}{100}$th grain of sulphate of atropia daily, which has, in great measure, arrested the profuse salivation.

[*Sequel of the Case.*—This patient rapidly went down hill, and died on the 17th June, a week after this lecture was delivered.

The post-mortem examination was made by Dr Joseph Coats, who reported as follows:—"Leave was only obtained to examine the head. The body is emaciated, and there is great thickening and distention of the left knee-joint.

"*Head.*—There is considerable œdema of the soft membranes, and the ventricles are greatly distended with a clear fluid. There is no exudation at the base, and the brain substance in general is normal in appearance. In particular there is no appearance of the nerves being involved at their points of issue from the pons or medulla. On laying open the fourth ventricle by an incision carried through the cerebellum in the middle line, a bulky tumour is found in its floor. It occupies the greater part of the floor of the ventricle, its greatest length and greatest breadth being about an inch. Its middle is slightly below the middle of the cerebellum. The tumour is much more bulky on the right than the left side, and the middle line is pushed considerably over to the left. On its surface the tumour is nodulated, and has a bluish colour. It feels somewhat firm to the touch, but it is not cut into at this stage."



Tumour of the Medulla Oblongata, seen from above, projecting into the floor of the 4th ventricle.

The preparation was hardened in alcohol, and the following is Dr

Coats' report of the section:—"The tumour was divided from before backwards, the section being made through the pons and medulla so as not to interfere with the appearances as presented in the fourth ventricle. To the naked eye the structure is not obviously different from that of normal nervous tissue, and in particular there is no caseous material. There is indeed no obvious demarcation between tumour and nervous structure. Under the microscope the tissue of the tumour is seen to consist of an intricate network of fine fibres with very occasional round or oval nuclei—the structure being that of a simple glioma."]

ARTICLE III.—*Case of Hysterical Angina Pectoris.* By Dr T. W. M'DOWALL, Northumberland County Asylum, Morpeth.

THE perusal of Dr Balfour's paper on "Paroxysmal Angina Pectoris" (*Edinburgh Medical Journal*, vol. xxvi. p. 769) tempts me to record this case of hysterical cardiac pain. The few remarks it may be necessary to make on the more important symptoms I shall reserve until the details of the history have been given.

M. M., æt. 24, was admitted to this asylum in January 1880. She is the fourth of seven children, six girls and one boy, all still alive. One sister injured her spine, and was threatened with curvature, but she ultimately recovered by wearing a plaster of Paris jacket. Her brother, now æt. 28, has suffered much from occasional intense headache, and about a year ago he had a fit, said to be epileptic. He is not very steady in his habits. With the exception of the sister already mentioned, who had also an attack of rheumatic fever, the others have enjoyed excellent health. Her father was a great drunkard, had several attacks of D.T., and died of typhoid fever. Her mother is still alive, and the only fact calling for notice in her past and present condition is that her temper is unusually violent.

My patient was a merry, romping child, but not strong. Walking soon tired her, and if she went a distance of about two miles on foot to church, she always fainted during service. If she avoided the fatigue by going in a gig, she never fainted outright, but frequently was on the point of doing so. She menstruated at twelve for the first time, and was in good health, though languid and unable to enjoy the more violent amusements of her sisters. For about two years after the appearance of puberty she walked much in her sleep. She used to get out of bed once or twice a week in a state of somnambulism, and often took one of her sisters out of bed, but always replaced her carefully. Ultimately these symptoms disappeared, and her sleep was sound and healthy until she was seventeen, when she had her first attack of rheumatic fever. Since then it has been much disturbed, chiefly by erotic dreams. These indecent visions are so real that she fears to fall asleep, and she tries to keep awake that she may escape her tormentors. Though sexual ideas are thus constantly in the girl's mind, she has been, I have every reason to believe, chaste in conduct: her ordinary conduct is most modest and correct. Her mind was polluted in childhood by nurses, who showed her indecent pictures, and spoke in her presence of their intrigues. Night after night men come to her bedside; but chiefly one, who appears to get into bed with her and have intercourse. All these figures appear on the left side of the bed. The girl has accordingly often tried to get rid of these visits by sleeping in a bed having its left side against the wall. As was to be expected, this expedient was unsuccessful: the phantoms appear as before, and on the same side. Two years ago, when her mind was giving way from other causes, she believed that she was pregnant. Curious as it may seem, her abdomen swelled, and she insisted on being examined by a doctor, who believed there was some fluid. Though she cannot remember the pains of delivery, she firmly believes that she gave birth to a child, and she recollects crying when she thought her mother took the baby away. She cannot now recall distinctly its appearance, but she knows it was a girl. When she slept she felt as if the child lay in her arms; as she awoke it vanished. So firmly did this hallucination take hold of her mind, that at the present time she declares that, though she *feels* she must have had a child, she *knows* such an occurrence to have been impossible.

She had her first attack of rheumatic fever when aged seventeen, and though she was helpless for at least three months, the heart was not affected. She continued to be delicate, and suffered from rheumatic pains till between nineteen and twenty, when she had her second attack. She recovered more quickly.

About two months afterwards she was seized by a sudden pain in the region of the heart. It was paroxysmal, and continued to recur for six weeks. One doctor said it was angina pectoris, another that it was nothing but hysteria. When convalescent she began taking chlorodyne when the pain threatened to return. She describes it as having been so excruciating that she avoided all exercise for months lest it should return, lying almost constantly on a sofa, not daring even to laugh, as the slightest emotion brought it back at once. Ultimately she was able to go out as a governess, but was in feeble health, tortured by rheumatic pains and a constant uneasiness in the heart. So she continued until aged twenty-one, when another cardiac attack occurred. She was removed to the Newcastle Infirmary, and remained there six weeks. She was told that she suffered from neuralgia of the nerves of the heart. On returning home she took enormous doses of narcotics, chiefly chlorodyne, of which she consumed 22s. worth in a week when she could afford to buy so much. So irresistible was this craving for drugs, that she secretly disposed of such of her mother's spoons, linen, etc., as could be removed without being immediately missed. Her life now became a burden to her, and she twice attempted to poison herself. Unable to engage in any active occupation, she spent her time in devouring sensational novels. Such was her condition when the Tay Bridge disaster occurred. This horror so fascinated her now really diseased mind, that she implored her friends to take her to the spot. This they imprudently did, with the immediate result of totally upsetting her mind. When she arrived at the broken end of the bridge, men were engaged in recovering bodies. She saw what she believed to be one, screamed in an ecstasy of terror, and became on the spot a raving maniac.

When admitted to this asylum she was acutely maniacal, and laboured under hallucinations of sight and hearing. She chiefly raved about Zulus and the Tay Bridge accident. She acted as if she were still at the bridge, for she spent most of her time in tossing about her bedding, looking for bodies, calling for the grapnels, etc. When she imagined she saw a body she shrieked wildly for assistance to secure it. Occasionally she recited poetry, cheered on an attack on Zulus, mistook a person at her bedside for General Roberts, but she speedily returned to the chief subject of her delirium.

The day after her admission she was quiet, composed, and for the most part answered questions correctly. She could give no reason for her attack of excitement. She knew where she was, and said that her doctor had sent her here for softening of the brain. She confessed to a liking for narcotics, and admitted that she had more than once taken a 2s. 9d. bottle of chlorodyne in a day. She denied intemperance. She could not tell when she came here, how long she had been here, or what day it was. Sometimes during examination, and at other times also, she shuddered violently, the spasm being most marked in the head and arms. She was nervous and fidgety, like a person afraid of some threatening evil, and her facial expression indicated distress and anxiety. She complained much of pain in the back and top of head.

Physical Condition.—Hair dark brown; eyes gray; pupils equal and dilated; face pale and rather puffy; body in good condition; no injuries. Slight cough, but lungs apparently normal. Heart's action irregular; no murmur; pulse 72, weak and small. Tongue rather dry, but clean; appetite fair; bowels irregular; menstruation regular and present.

22d January.—Since last note she has improved somewhat. She has suffered a good deal from toothache, which has kept her awake at night. One decayed tooth was removed, but the pain has returned. She does a little sewing, but she is dazed and confused in appearance, and evidently much engaged by involuntary trains of thought. She still shudders frequently as if in terror. She often says that she feels as if something horrible were about to happen. She feeds fairly well, but refuses animal food.

27th January.—She is unsettled by day and restless at night. She will engage in no form of occupation. She says she feels miserable, but cannot state exactly what is the cause. She is unsociable, and takes little food.

30th January.—Yesterday she had a severe attack of pain in the abdomen, with tympanitis. Relief was obtained after the administration of two enemata. There is no further improvement in her mental condition. Her nights are particularly bad, and she is tortured by all sorts of horrible hallucinations of sight and hearing.

3d February.—She was restless and noisy last night, being under the delusion that there were people or ghosts in her room about to murder her. Her struggles with her supposed murderers and with any person who tried to restrain her were so violent that it was necessary to remove her to a padded room, where she fell sound asleep after taking 30 grains of chloral and the same of bromide of potass.

9th February.—She is somewhat more composed, says she always feels frightened at night, but cannot tell why. Her appetite has decidedly improved.

13th February.—Is much quieter, sleeps better, and is industrious and cheerful.

23d February.—She is decidedly more composed both by night and day. She sometimes complains of pain across the loins, probably rheumatic. Even now she is not free from delusions and hallucinations as before. She declares that she often sees ghosts and real people at night, and maintains that there must be a churchyard immediately outside her bedroom.

19th March.—For some time after last note she rapidly improved in every respect, but about a week ago she became wildly excited, smashed glass, etc.—in fact, relapsed to her state on admission. She was kept in bed, and became calm in a day or two. Now she is again in a wild and restless state. She immediately assaults any one who speaks to her or comes in her way. Incessantly in motion, she marches up and down in a fierce, tragical manner. She has been taking a small dose ($\frac{1}{16}$ grain) of hyoscyamine twice daily with little benefit. At night she requires a chloral draught.

31st March.—She is now quiet and well-behaved; is employed daily; eats and sleeps well.

1st May.—Still does well; works steadily during the day, and sleeps quietly at night. Her general health seems good, though she occasionally complains of headache.

3d May.—She is now in one of her most violent states of stero-mania, restless, excited, violent, and destructive. To be kept in bed. She has had ¼ grain of morphia subcutaneously twice with good effect, and a full dose of mist. sennæ co. has acted beneficially. The globus hystericus is well marked. To-day she seems quieter, more conscious of her state, and capable of self-control. There is great vascular excitement, with congestion of head and eyes, tumultuous action of the heart, and full, bounding pulse. She still complains of headache.

4th May.—Again restless and excited both by day and night. Morphia given with good effect.

5th May.—She was restless last night, but is now quiet and well-behaved, though far from well mentally, and it is evident that she is making great efforts to repress her tendency to violence and excitement. As she complains much of headache, cold to the head is to be applied.

10th May.—On the whole she is better, but is miserable and decidedly suicidal. Yesterday she removed a pane of glass, intending to escape and drown herself.

31st May.—Quiet and well-behaved since last note; is constantly busy with needle-work, and takes food well. She sleeps better, but occasionally requires a dose of chloral.

18th June.—On the 13th inst. she was suddenly seized with an acute pain in the præcordial region. Her pulse was quick and bounding, and occasionally intermittent even for three or four beats. The pain was partially relieved by nitrite of amyl, which exhibited its usual physiological effects. Careful examination failed to show any abnormal sound in the heart. On the 14th she again complained of the pain coming on at intervals, shooting through to the back and down the left arm; relieved rapidly by hypodermic injection of morphia. On the 15th she was easier, but the pain returned during the night. Relief was obtained by a dose of tr. opii and tr. digitalis, and by poulticing with linseed and mustard over the cardiac region. Heart's action still intermittent, but otherwise normal. No dyspnœa, no cough. On 16th she was transferred to the infirmary ward, where she again had one paroxysm, again relieved by opium. On 17th she had a draught at bedtime, but did not sleep well, being constantly threatened by a return of the pain.

To-day, the 18th, she had another attack of cardiac pain, more severe than any yet observed, but speedily alleviated by morphia. Her condition has given the medical officers much trouble as to diagnosis. Whilst the pain lasts her condition is very distressing, but the agony is not such as is usually observed in angina pectoris. During the intervals she presents no marked symptoms beyond copious perspiration, slight pain in one or two of her fingers, and a swollen, bloated appearance of the face. It is thought that, without shamming, she makes the most of her ailments, and that all the symptoms may be hysterical. There has been no rise of temperature, and the pulse is now quiet and regular. Although the tongue has been clean and the bowels regular, the appetite continues bad and the breath foul. She takes nothing but milk and tea.

3d July.—The symptoms which manifested themselves on the 13th June for the first time are now much more severe. There is marked hyperæsthesia of the præcordial region. A thrill is felt on palpation, but auscultation, though it indicates some impurity of the first sound, reveals no grave lesion. When the paroxysms of pain occur the patient seems to suffer intensely. In her agony she writhes about, assuming extraordinary attitudes, but she appears to obtain most relief by exerting pressure on her chest by squeezing her knees with all her might against the præcordial region. To increase the power she interposes her hands or a portion of the bedding. Ease, however, is only obtained by the subcutaneous injection of morphia. Sometimes the pain is only diminished by the anodyne, not entirely abolished, and then it continues for several hours. As a rule, complete relief follows within five minutes after the administration of the morphia. The attacks, besides increasing in severity, have become more numerous, three to five in the twenty-four hours, and follow the slightest exertion. She sometimes, during the attacks, complains of great difficulty of breathing, and more than once said that she felt on the point of death. During the paroxysms her face is sometimes pale, but more frequently flushed; the whole body is bathed in a copious clammy perspiration. The pulse is quickened, and occasionally intermittent. She is not allowed to get out of bed, or, indeed, move in any way, otherwise an attack comes on at once. At bedtime she has a draught of bromide of potassium. Her diet consists mostly of milk; occasionally she takes a little bread.

12th July.—During the last three or four days, whilst her general condition has remained much as before, she has complained of acute rheumatic pains in nearly all her joints. There is no redness or swelling to be seen, but she says that much pain is caused on movement. The pulse is 102, full and bounding; the temperature 98°·9. There is marked derangement of digestion, due probably to the large and frequent injections of morphia. The attacks of cardiac pain have increased in frequency, and, were it possible, in severity. These are from six to ten in twenty-four hours, and a grain of morphia given for each; if relief does not follow in about fifteen minutes, another half grain is given. These large doses do not produce sleep, not even drowsiness, and the pupil is unaffected. Occasionally the attacks begin with great suddenness, even during sleep. Last night she appeared to the nurse to be sleeping calmly, when she awoke with a scream, and, in an agony of pain, sprang out of bed, falling helplessly on the floor.

24th July.—During the last week her general condition has been better. The attacks of cardiac pain have been fewer, less severe, and have yielded more readily to treatment. The digestion is also decidedly better, and she has been able to be removed from bed once or twice for a short time. The character of the cardiac pain has changed, but the patient makes evidently voluntary efforts to keep up the previous external character of the attacks. She writhes and squeezes so that one is surprised that she is able to maintain such extreme muscular efforts; but her desire to deceive is useless, in spite of a fairly faithful imitation. Three days ago a markedly hysterical symptom appeared; she said she could not pass water. Inquiry proved her complaint to be unfounded, and as no further attention was paid to it, nothing more has been heard of it.

29th July.—For the last three days distilled water has been injected instead of morphia, with equally satisfactory results. She is considerably improved generally; looks brighter; slept well last night without a draught; takes food better; gets up for a short time daily, and is encouraged to employ herself with needlework.

17th August.—She continues to improve, and now appears to be nearly well in body and mind. All the former symptoms have disappeared except the bad appetite, which is still poor.

11th September.—She continues to do well in all respects. She is now a cheerful, industrious, and well-behaved young woman.

22d September.—Discharged to-day "recovered."

That this was a case of hysterical angina pectoris is evident enough when the record is read from beginning to end, but the diagnosis was by no means so easy whilst the symptoms were in process of development and a history of her former condition was wanting. From the time that the recurrent attacks of cardiac pain occurred it was believed that the symptoms might be of hysterical origin, for the patient was young, a female, and not a likely subject to suffer from any of the structural lesions on which the more grave attacks are believed to depend. But that view was difficult of acceptance, because the attacks were so like the genuine. No words I can use can convey any idea of the agony she suffered. As to the reality of the pain there could be no doubt; it could not be simulated. As the severity of the attacks was diminishing, and she attempted to keep up the former symptoms, she failed completely. But the diagnosis of hysteria is settled by the readmission of the patient a short time ago, presenting, amongst other symptoms, almost perfect muscular paralysis and complete sensory paralysis on the whole left side—a perfect example of its kind.

During her illness she consumed between 120 and 150 grs. of morphia, yet she presented none of the physiological symptoms of its action. A dose of 2 grs. subcutaneously did not produce sleep. It is possible that her previous habit of taking narcotics in large quantity had established a tolerance of the drug.

I have consulted such medical literature as is within my reach, and have related the above facts to several of my friends specially interested in nervous and heart affections, but have not been able to find any similar case. Most treatises refer to hysterical angina pectoris in a very off-hand way, and convey the impression that the diagnosis is easy and the symptoms never severe. But if the features of the case I have just described be compared with the genuine disease as portrayed by Professor Gairdner in Reynolds's *System of Medicine*, it will be found that the similarity is complete, even in the minutest detail, except in one respect—the facial expression. It is usually pale and pinched; here it was puffy, and, though usually pale, sometimes slightly injected.

In the March number of the *Edinburgh Medical Journal* the following paragraph appears in Dr Balfour's paper, and it may be accepted as expressing the latest views of a perfectly competent authority:—"We must never forget that angina is sometimes feigned, and is occasionally of a purely hysterical character. Mrs Chisholm, whose case was formerly commented on, was an instance of the former character, and a very clever imposter she was, giving a great deal of trouble before she was detected. Last winter we had, in the case of the girl L., a well-marked example of the hysterical variety. L. suffered from aortic regurgitation, from which she subsequently died, and the true character of the attacks was not at first suspected; but happening to find her in the fit at visit one day, I at once recognised its hysterical character, and took measures to prevent its recurrence, which were happily successful. I have seen several other cases of hysterical angina, but none so well marked as this, and, let me add, never any one in which there was less cause for suspecting hysteria, or more apparent reasons for believing the paroxysms to be real." Dr Balfour does not say what were the "measures" which proved so successful in arresting the hysterical symptoms. During the rather numerous minor attacks my patient has suffered from, the treatment has not presented any difficulty; but whilst the prolonged attack continued—a period of nearly six weeks—the life of my assistant medical officer was a burden to him. When at its worst he was called up several times during the night, and she was seen as a matter of routine nearly every two hours during the day. I could not avoid believing that her condition was greatly aggravated by excited and ungratified sexual desires, and that she derived a morbid satisfaction in having a young doctor in almost constant attendance.

Even in an asylum it is rare to find in one patient so many indications of disordered nervous action, and no more striking example could be obtained of their correlation. To some of these I would like to refer. Excluding any neurotic tendency, of which there is no distinct evidence, I think there can be no doubt that her disease is attributable to derangement of the sexual organs. I should have previously stated that her nymphæ are distinctly enlarged, and have projected beyond the labia majora since puberty. These organs, consequently, were exposed to friction whenever the girl moved about, and she confessed that she had to abandon walking exercise on account of the accompanying friction causing the development of erotic ideas. The ultimate cause of hysteria has long been debated, but my experience leads me to adhere to Romberg's view that "hysteria is a reflex neurosis caused by genital irritation." Since my attention was directed to the subject I have found, in the few cases in this asylum presenting markedly hysterical symptoms, that in every one the nymphæ are enlarged and project beyond the labia majora. It is therefore my intention to devote further care to these cases, and, should the results warrant it, publish them.

Perhaps no feature in the case now reported is more curious than the "nervous pregnancy" of French writers; but as it does not in any way advance our knowledge of that unusual and puzzling disease, I can only refer to the late Professor Laycock's book on the *Nervous Diseases of Women*, where will be found an extraordinary collection of facts bearing on this and other abnormal phenomena associated with disturbances of the sexual system.

In conclusion, there is one fact to which I would like to refer, though not yet mentioned. When my patient was readmitted she exhibited, as already stated, marked hysterical hemiplegia, etc., along with marked increase of patellâr tendon reflex and ankle clonus. As her condition improved and the paralytic symptoms disappeared the reflexes became quite normal. This fact is of importance, as much attention is now paid to the excess of patellar and other reflexes as indications of organic disease. On this point Dr Gowers is emphatic. He says, "The ankle clonus *can never be obtained in health by sudden passive tension.* Thus produced, it is absolutely pathological, and of the highest importance as certainly indicative of structural change in the spinal cord. Its diagnostic importance can hardly be overestimated. In many cases in which it occurs the nutrition and sensibility of the legs are unimpaired, and the weakness in the legs is likely to be regarded as 'functional,' or, in a woman, as 'hysterical.' I have seen many such cases, thought to be hysterical, in which it needed but a touch on the sole of the foot to excite the ankle clonus—an absolute proof of the existence of organic disease." In opposition to such a decided statement from such an authority my single case would be of little value; but I have observed another similar case —a girl labouring under severe hysteria, and exhibiting many curious paralytic symptoms and rhythmical movements. In her, exaggeration of the ankle clonus was marked in both legs; in the case whose history I have given in such detail the increase was limited to the paralyzed limb. My friend Dr Drummond of Newcastle has also observed similar cases, and was, I believe, the first to call Dr Gowers's statement in question.

ARTICLE IV.—*Case of Hydrocele in the Female.* By JOSEPH BELL, F.R.C.S.E., Surgeon to the Royal Infirmary.

FOR a very elaborate, interesting, and exhaustive account of the literature of this rare malady we would refer to the July number of the *American Journal of Obstetrics*, and in it to an article by Dr Wile of Sandyhook. The literature is very scanty, and recorded cases very few, so the following may be of interest:—

Miss S., æt. 45, consulted me in 1880 regarding a tumour, supposed to be hernial, in the right labium; it was about the size of a turkey egg, tense, and at times painful. More than once it had been supposed to be strangulated, and attempts at reduction made. She had been ordered trusses, but could not wear them. Menstruation was regular, and seemed to have no effect whatever on the size or symptoms of the tumour. Though it extended up into the canal, it derived no impulse from coughing if the internal ring was supported, *i.e.*, there was no fluid communication with the peritoneum. I at once tapped it, with great relief to the tension, and drew off about ten ounces of straw-coloured fluid exactly resembling that of hydrocele in the male. This was followed by great relief, but by the reappearance of the tumour in a few weeks. A second tapping had the same result, so on the third occasion I tapped, and then injected with two drachms of the tincture of iodine of the Edinburgh Pharmacopœia, with the result of a speedy and permanent cure.

ARTICLE V.—*Summer Studies.* By JOHN BOYD, M.D., Slamannan.

> "Nun ecce, hiems transiit, pluvia preteriit, abiit. Florentia conspiciuntur in terra; tempus minuritionis advenit, et vox turturis auditur in terra nostra."
> —*Libri Canticorum*, ii. 11, 12.

I BELIEVE it will accord with the experience of the majority of our brethren occupied in rural practice, that the winter season is not suitable for making many additions to their stock of professional acquirement, especially where a number of years' service in the same locality has brought about the natural results of extended *clientèle* and numerous demands for their immediate attention. After a longish round, the examination, discrimination, and treatment decided for some scores of cases, the district doctor, having reached home and partaken of the evening repast, is very apt to find that the indispensable perusal of the monthly *Edinburgh Medical Journal* and a London weekly are about as much of scientific study as he can manage—that the newspaper is the best pabulum to his present state of intellect, and that, according to the hue of his political creed, he may catch himself dropping gently asleep over a spicy buff editorial, or waking up with a start on his nose impinging on a telling cerulean paragraph. But when lengthened daylight and elevated grades of thermometer and barometer tend to abbreviate the case list, and herald the advent of that *epidemic of good health* about which Sir Robert Christison told us in the clinical class ever so many years ago, the appetite for study revives, and the periodicals and other publications received during winter are scanned with eagerness, and lend an additional zest to vernal delights.

Some time ago a series of numbers of *La Independencia Medica de Mexico* came into my hands, and arrested my attention by the admirable manner in which the superb Spanish language adapted itself to what is termed in colloquial English *blowing up*—Scotticè, *flyting*.

It appears that in the ancient capital of the Aztecs the hospitals and other institutions for the benefit of the sick are under the rule of a governmental or municipal department entitled La Junta de Beneficiencia, but which, according to the allegations made against it in the periodical referred to, merits rather to be named that of *Maleficiencia*. From ill-judged parsimony, it seems that in some of the Mexican hospitals (San Pablo and San Andrès) the patients are neither cleansed, covered, nor fed sufficiently; that their medicines are tardily supplied from some central bodega or magazine instead of from a pharmacy in each edifice, and that professors and students are placed under vexatious and humiliating restrictions, the clinical clerks and house-surgeons being replaced by barbers and phlebotomists. In the hospital of La Maternidad a favourite nurse is exalted to predominance over physicians and patients, something in the style of Guy's in London. Our obstetric professors would scarcely approve of such restraints being placed on their pupils as that none of these should be allowed to enter the wards unless when, by hoisting a flag or firing a gun, intimation was made that a phenomenon so unparalleled as a case of parturition was going on.

Interested by the relation of such a curious state of matters, I wrote making some inquiries of the editor, Dr Don Fernando Malanco, of No. 1° Calle de San Ramon, and by way of reply that gentleman has regularly sent me the weekly numbers of said periodical up to end of vol. i., for which courtesy and kindness I beg to record my sincere thanks. *La Independencia Medica de Mexico* is a large quarto, remarkably well printed on good paper. In most of the pages a division is made, the lower third of which is taken up by a course of lectures on general pathology by Dr A. Segura—curso de 1880—which are somewhat abstract and diffuse, yet profitable reading. The periodical is mainly filled up with extracts from German, French, Italian, and English medical journals, interspersed with native productions, some of which are sufficiently interesting, as the series of clinical lectures in the Escuela de Medicina on hepatic abscess by Jimenez, and the report by a local medical committee to the governor of the district of Tepic on the diseases of that locality, presided over by Dr F. G. Virgen. It appears that remittent, intermittent, and cachexia paludosa form the most serious endemic maladies there; that quinine in large doses, arsenic, and iodide of iron are largely beneficial. The latter, termed *mal de la costa*, is vividly described as a remittent of biliary form, with exacerbations of the double tertian type, splenic induration and hypertrophy, ascites, chloro-anæmia, and œdema of the extremities, fatally terminating with diarrhœa. Removal from the district wherever possible is enjoined by the physicians, and total abstinence from milk, the cows pasturing in marshy tracts. In the months of September, October, and November 1877 an epidemic of intermittent, causing fifty deaths in Tepic, almost confined to the poorest classes, coincided with a notable deficiency of rain. The mortality in question rapidly diminished on the ayuntamiento and the more opulent citizens giving free supplies of quinine under medical direction. An ignorant prejudice against the use of this most potent arm in the therapeutic arsenal has to be encountered among the poor.

In Tepic rheumatism, dysenteries, and diarrhœas are also induced owing to abrupt variations of temperature and permanent humidity of the soil.

"We are enjoying magnificent weather on the morning of a clear day, not a breath of wind stirring, and are enchanted by the pure azure of our sky; at mid-day the elevation of the temperature and the movements of our occupation have heightened our transpiration, when suddenly thick clouds arise on the horizon—the temperature lowers, a breeze damp rather than cold blows on our heated skins, and in the end a thick white cloud envelops and damps us thoroughly. Immediate results—catarrh and rheumatism in the predisposed. For the latter, complicated as they often are with intermittent, it is necessary to treat with quinine and iodide of potassium. Colchicum, digitalis, and aconite are also seen in our prescriptions. We are beginning to make use of the salicylate of soda, but have not yet had sufficient experience of it to decide in its favour."

Dysentery occurs frequently here. A pharmacien of large experience here has noticed that it prevails most during the season of *piñas*, attributing it to the acridity of the pressed mass and over-acidity of some kinds of this fruit.

Dr F. Patiño has a readable article on milk, its falsifications, and the best means for their detection, wherein it is stated that the most frequent sophistications of that aliment are—1. An emulsion of the oleaginous seeds of the fruit of the *calabaza;* 2. Brains of animals, not excluding those of the ass and the dog.

Señor Pareira has a series of papers on the "Botanical and Therapeutic Properties of various Plants," in which he quotes largely from French authorities; and a disquisition on homœopathy is also written by Patiño—a subject which has here momentarily emerged, in consequence of the circumstances attending the demise of a late eminent statesman, from its legitimate position—that of a toy for those who, having more time and money than they know what to do with, play at being sick. Some very comical calculations are made as to the bulk of the liquid required to contain their infinitesimal dilutions.

That medical squabbles are not unknown in Mexico is demonstrated by the details of a trial of a case of alleged poisoning by sulphate of morphia of one Apolonio Hernandez, prescribed by Dr Zuloaga, 7 centigrammes divided in 6 pills, 1⅙th centigramme for dose daily. The patient, who was somewhat cachectic, felt benefited by the treatment. Dr Zuloaga repeated the prescription. On the eighteenth day, after the sufferer had taken in all 4½ grains of the morphia salt, convulsions supervened. Dr Martin Polanco was called in, who, having seen the prescriptions, stated Hernandez was poisoned; that the physician who had caused the evil should be sent for to co-operate with him; and ordered ice to the head and some sedative fluid. The affair took publicity; the criminal tribunal of Guadalajara caused an inquiry to be instituted; and the accuser made declaration that he did not know who was to blame for the poisoning; it might have been the doctor, the druggist, or the patient himself, who died on the nineteenth day. Dr Fortunato Arci was cited as witness, who testified that, twenty-one days having elapsed since the inhumation of Sr. Hernandez, it was no use exhuming and inspecting the corpse, the vital lesions being now obliterated by putrefaction; that the salts of morphia, being of vegetable origin, could not now be submitted to chemical analysis; and that a daily dose of 1⅙th centigramme was the minimum ordinary dose of a medicine that could not accumulate in the organization, and could not, under the circumstances, give rise to poisoning. Similar testimony was emitted by Drs Figieroa, Rubio, Naredo, and José M. Camerena, all of whom appear respectable elderly practitioners residing in the neighbourhood. The result of the trial was a certificate from the criminal judge, C. Morelos, and secretary A. Ulloa, that there was no evidence whatever of poisoning in the case, and that Zuloaga was entirely innocent of the charge brought against him by Dr Polanco.

I must conclude these imperfect notices of the periodical referred to by extracts from a communication from Don Joaquin Herrera on "La Escuela Medica de Mexico," in which he states that the edifice granted to medical study in 1853 was that of the Inquisition—where in the times of Spanish supremacy they used to call in question their Robertson Smiths and their MacFarlanes—now devoted to the production of such medical eminences as Jimenez, Castro, Pacheco, Leal, Gutierrez, and Oliva, the latter more celebrated abroad than at home. This building, situated in a central square of the city, has a severe aspect, being in the style of the Spanish architecture in the sixteenth century. Of its two wings the western is 27 metres long, the south 37½, each with three friezes and a series of windows open to the street, with their corresponding balconies symmetrically arranged. Broad in base and thick in the walls, the lower stories are inferior in ornament and proportion to the superior. In the façade four columns receive the cornice, wrought with Gothic relievos. A squared and wide passage leads to the first court, bounded by four corridors, elevated, spacious, and well lighted, supported by four pillars on each side. On the left there is a large saloon wherein the examinations and discussions are held, 21 metres by 7, with a platform at the left end, where are placed five chairs under a red velvet canopy for the examiners. At the opposite extremity is a colossal statue of St Luke, the doctors' patron saint. Opposite, a handsome stair leads to the second floor, where on the left the library opens, 25 metres long, 7 wide. The walls of this are covered with shelves containing more than 2000 volumes, partly Greek authors, but mostly exclusively medical. Here, in large parchment-covered folios, you may read Hippocrates, Galen, and Sydenham; but of the rich and exuberant modern productions of scientific medicine comparatively few representatives are visible. The works most required by the student—those of Peter, Jaccoud, Gossellin, or Follin—are scarcely to be found. In front of the stairs, on the opposite side, there is a large apartment containing the anatomical museum, which is 25 metres in length by 7 in breadth, and lighted by three windows. The four walls are clad with shelves containing many curious anatomical specimens, some of which have been prepared by distinguished pupils of the same school. A number of preparations in wax, exemplifying most naturally the diseases of the skin, have been imported from Vasseur of Paris. Some of the shelves are filled with surgical apparatus and instruments, but not nearly so many as should be had. Upstairs, in the second flat, are the class-room for legal medicine and the amphitheatre for descriptive anatomy, 11 metres long, 7 wide, and elevated 2 metres above the level of the general roof. The ceiling, ornamented by a picture of Vesalius engaged in dissecting, is lighted by oval skylights, besides three great windows opening on the *azotea* or flat roof. A series of seats rising by degrees in horseshoe form accommodate the students, in front of which is the table for the subject to be demonstrated. Behind this is the Professor's chair: at each side of it is a glass case containing a prepared skeleton in the vertical position. In front of this part of the highest story, recently constructed, are two dissecting-rooms, each 13 metres long by 6 broad. To the left of these are other two apartments—one for the class of operations, the other for that of physiology. These constitute the principal portion of the building, but there is a second interior court of smaller dimensions—19 metres long and 8 broad. On the right side is a large, handsomely-furnished saloon, occupied by the Academy of Medicine, with a side tribunal and elegant seats of fine wood and cane-work, adorned also by a portrait of Dr Miguel Jimenez. Entering from this is a smaller room containing the archives of the Academy. Opposite is the decently fitted up class-room of general pathology. On the flat above there is an apartment 16 metres long by 5 broad, in which the classes of therapeutics, pharmacy, history and physiology of drugs are held. The shelves in this saloon are filled with chemical and other preparations of materia medica. Various other rooms in this locality present no particular interest.

Notwithstanding its apparent dimensions, the ex-Inquisition—now dedicated to medical instruction—is ill adapted for its present object, although the larger and suitable saloons just described were made only two years ago out of small, ill-lighted, and ill-ventilated rooms termed *calabozos* or prisons, and, indeed, formerly occupied as such. The present director—Dr D. Francesca Ortega—merits much commendation for the transformation he has effected since he took office at the commencement of 1879. Much that is indispensable still remains to be done; and it is greatly to be desired that the government should realize the obligation incumbent on it to efficaciously aid an establishment which is a genuine honour to the country.

Proceeding to the opposite extremity of the Ibero-American world, I would call attention to Nos. 1, 2, 3, and 4 of *Anales del Circolo Medico Argentino*, Buenos Ayres, 1880, a monthly publication under the auspices of an association of medical practitioners and students, which has been aided by a subvention of 70 dollars per month from the government, and is edited by Dr Wernicke. It includes a threefold division of national bibliography, reviews of scientific progress, and local notices; in the first of which appears a short reference to the "Movimiento de la Poblacion de Buenos Ayres durante el año 1879," a treatise of 52 pages, by Dr E. R. Coni, on the statistics of that city, which, it is said, had in that year 257,440 inhabitants, an increase of 23,411. There were 10,865 births and 6794 deaths, leaving 4071 as the vegetative augmentation. Dr Coni is justly horrified at the paucity of marriages in the Argentine capital—only 1636 matrimonial celebrations, and of these but 378 were of Argentines! Notwithstanding this deplorable fact, there were 42·2 births out of 1000 inhabitants, placing Buenos Ayres about the highest post among great cities in this respect; and in point of illegitimacy it transcends even Wigtown, Banff, and Aberdeen among ourselves, the natural children being 15·7 per cent. Let us hope that, in respect of morality, they will ultimately attain to the purity of Paisley, and that the defective education of the Argentine women, their love of luxury, the *empleomania*, and horror of manual labour, will not continue to warn off Hymen.

The editor has two papers on "Professional Privilege, or the Freedom of Exercising the Healing Art," quoting the 1st, 2d, 6th, and 41st clauses of the law regulating the exercise of medicine passed in 1877. Herein he states that of the 300 individuals who live in Buenos Ayres by medical practice, only 200 are legitimately approved medicos, the rest quacks, homœopathists, etc., not to mention the tribe of prescribing druggists who fatten on syphilitic and children's maladies. He dwells on the two different systems of medical matters,—1st, that of the United States, where anybody may call himself and practise as doctor if he can only get people to employ him, leaving it to popular intelligence and acumen to discriminate between the educated and qualified and the spurious article; 2d, that of Germany, wherein none are allowed to entitle themselves or act as physicians and surgeons unless after having passed the prescribed courses of education and examination,—apparently preferring the Yankee no-system, and advances that—1. The law that regulates the exercise of our profession gives room for the commission of injustice. 2. This law renders itself odious to the public by the manner in which it is executed. 3. This law gives occasion to some members of the profession to show themselves unduly self-interested, attracting thereby the contempt of the public. He gives three cases in support of these propositions, which do not seem to me to bear much on the point, and, for one, I would object to the claims of medical men to public recognition and protection, being classed in the same line with those of brewers, confectioners, or tailors.

A more satisfactory disquisition is one on "La Metaloscopia y la Metaloterapia," read at the meeting of *Circolo* on the 9th October last by Dr D. B. Novaro. Without presenting anything of moment as regards originality, I never read a more lucid or satisfactory discourse. The speaker commences with the views of Burq as to the therapeutic efficacy of metals, more especially in connexion with their agency on individual idiosyncrasies. In consequence of certain mysterious affinities (Burq's exact words) between the living entity and the constituent elements of the medium respired, there exists between the various organisms and the widely diffused metals, at head of which *iron* is found, intimate relations of sensibility, so much the more frequent for a given metal in proportion to the greater diffusion in the earth of it in its native state. Each of us possesses his special metallic sensibility, and the metal which will cure him is the one corresponding to this sensibility. When a person falls sick, all we have to do is to find the metal with which he stands in relations of sensibility; this found, if it be administered in distinct forms, a cure will be effected. The series of experiments to be made to discover the sensative metal constitutes *metaloscopy;* its external and internal administration constitutes *metalotherapia.*

"The day will come," says Burq, "when, . . . given a certain malady, we will only require to read in the classification what is the corresponding remedy. This day of which he speaks has

already passed; the remembrance of it, preserved by history and tradition, alone remains. Galen recommended the application of plates of lead to produce absorption of enlarged glands. Marcellus Epicurus employed gold plates for colics; these were used for gout by Alexander de Tralle, and by Peter de Albano for nephralgia; Paracelsus and Ætius employed the magnet; Andry, Thouret, and even Laënnec used magnetized iron. Of all these the rings, collars, galvanized medals, etc., are the traces, still highly appreciated in popular practice.

"There have been cases observed by prominent individuals in which the metallic treatment, the idiosyncrasy previously ascertained, has been manifestly efficacious, as in the case of chlorotic hysteria published by Bosias in 1860 in the *Gazette des Hopitaux*, where copper applied internally and on the surface produced the most rapid and satisfactory results. Three hysterical cases in the wards of Verneuil and Herard, in the same journal, in 1869, are described, one being sensitive to gold, one to copper, and the third to silver, with which being respectively treated internally, gave markedly good results.

"At Monpellier, Pechollier and Saint-Pierre noticed that whereas chlorosis abounded so much among the class of workwomen, those employed in the verdigris fabriques were entirely free from it. Burq observed that people employed in copper works were rarely attacked by cholera, even when all around them suffered severely. Nevertheless, when this metal was applied internally by means of a strong solution of the acetate in cases of cholera, Pidoux did not obtain the slightest benefit; out of nine cases all died except one, who refused the medicine. In the Hospital Beaujon one series of 7 cases gave 5 deaths on the following day; in another, out of 44 attacked, 43 died. At Calcutta, Honisberger found the immunity of copper workers from cholera not at all perceptible. However, notwithstanding these, other facts gave immense credit to the doctrines of Burq, among which figured the very curious actions of metallic applications in paralysis of sensibility. In these cases, by placing a plate of metal in contact with the anæsthetic spot, sensibility reappears in a few minutes, cutaneous circulation vivifies, and the diminished muscular force returns to its physiological condition. But all metals do not act in the same fashion on all individuals; in one iron excites the sensibility, in another zinc, another platinum, and so on.

"Twenty-five years elapsed before Dr Burq could obtain the scientific sanction of a society of savans for his labours. In the end the Society of Biology of Paris in 1876 agreed to nominate a committee from its members, composed of Charcot, Dumontpellier, and Luys, subsequently augmented by Gellé as aurist, Regnard as physicist, and Landolt as oculist, to investigate what truth was to be found in his views.

"The labours of this commission caused metaloscopy and metalotherapia to enter into a new and strictly scientific career. The two reports they issued may be stated as favourable to Burq.

"Their inquiries began with five or six patients in the wards of Charcot, whose cases were well known and carefully observed. The results attained were verified by a large number of other clinical patients, as well as those seen in general practice in the city. The commission satisfied itself that there really existed in paralysis of sensation the power of restoring sensibility to the implicated part by the application of a metal; that, moreover, all metals were not capable of provoking this effect, that each patient had her own special metallic sensibility, as averred by Burq.

"As to the second question, the value of metalotherapia, the report is not quite so explicit. They contented themselves with saying that in patients submitted to internal treatment of a metal with which they were previously ascertained to be *en rapport* an undoubted improvement had been obtained. One woman, for instance, who had been eleven years under Charcot's care in the Salpetrière, being sensitive to gold, this was given her under the form of the bichloride of gold and soda. In three or four days there was a visible improvement; at the end of three or four months she was completely cured and well."

As a sample of the results of the inquiries of the commissioners, Dr Novaro takes a typical case of a hysterical patient suffering from hemianæsthesia of the left side. "The loss of cutaneous sensibility shows itself by the absence of sensations resulting from the contact of substances, by the pallor of integuments revealing ischemia of the paralyzed parts, and by a diminution of temperature, well understood from comparison of symmetrical points on both sides of the body. In these conditions a fold of the skin could be pierced by a needle or pin without causing pain or the extraction of a drop of blood. The loss or marked diminution of the gustative sensibility is manifested by the impossibility of perceiving the taste of aliments. This is retained during mastication when they are in the right half of the mouth; on the left they feel like pebbles or wax, according to consistence, and the intense bitterness of aloes or colocynth is absolutely unfelt. By shutting the right nostril we can bring a strong-smelling substance like ether or ammonia to the left without producing any disagreeable sensation. The anæsthesia of the ear does not reveal itself so well, as that on the sound side supplies the deficiency of the left. But here Gellé has demonstrated that auricular anæsthesia also exists, and in studying this he discovered a very curious phenomenon, the *transfert* to be hereafter discussed.

"As to visual perturbations of function, Brequet made mention of these formerly. The patient sees badly with the left eye, the image of objects appears dim. Sheets and paper seem gray—the letters are undistinguished from the paper; in the extreme cases amaurosis supervenes.

"Science owes to Galezowski the discovery that this hysterical amblyopia is regularly accompanied with discromotopsia and acromotopsia—that is, with incomplete or absolute non-discrimination of colours. The perverted perception of colours is not arbitrary, as was demonstrated by Dr Landolt. In the normal condition all the colours are not equally perceived in all the field of vision. In the majority of people the largest visual field corresponds to the blue, 2d yellow, 3d orange, the red and green following. Violet is only perceived in the most central portion of the retina. In amblyopia hysterica the normal limitation of the visual field is markedly increased. The circles of each colour traced by Landolt contract concentrically, following the same laws as in the normal condition. The most central, that of violet, becomes so limited that the patient can no longer distinguish it. Following the progress of the malady, the next central colour, the green, disappears, then the red, then orange, till ultimately all distinction of the others is lost. Of course, in so mobile and variable a disease, in which the most serious symptoms appear and vanish with alarming rapidity, the perversion of colours does not follow always the rules thus traced by Landolt; but with a few exceptions allowed for, Charcot states these rules may be held as positive and absolute. With regard to metaloscopy, let us place one, two, or three gold coins on the middle left arm of our representative patient, having previously ascertained that this is her special metal, and bandage her eyes. At the end of some minutes she complains of heaviness in the arm, itching, and a sensation of warmth to the level of the gold coins. On raising them we find the skin reddened. A pin inserted causes pain, and a drop of blood follows. The application repeated a few centimetres away, neither pain nor blood are perceptible. In the course of a few minutes we perceive that sensibility diffuses itself around the seat of the coins, gradually spreading to the forearm and hand; the integumentary colour becomes normal, the temperature and muscular strength increase. What is noteworthy is, that while this is going on in the left arm, on the right arm—perfectly sound previously—the point corresponding to the metallic application of the left becomes insensible, pale, and anæmic; muscular strength diminishes, and from a pin-prick not a drop of blood issues. This phenomenon is the *transfert*. The other organs of the special senses present analogous phenomena. The normal effect of the metallic plates is impeded by superimposition of other substances, especially that of another metal."

"Regnard considered these observations due to electricity, and made sundry experiments which supported that view, but which were not satisfactory to Vigouroux.

"In England it was generally believed that these effects of metallic applications were due in many cases to roguery on the part of the patients, in others to a mental action. Many English medical authorities, such as Russell Reynolds, Broadbent, Althaus, etc., went to Paris to study the experiments of Charcot in La Salpetrière. Some were convinced, but not all, the professional mind having been predisposed by the previous knowledge of Elliotson's case of the woman O'Key, whose imposture was detected and exposed in 1838 by Wakely of the *Lancet*. Bennet, Denison, Carpenter, and Jenner are mentioned as the leading partizans of the mental-acion explanation; but Gamgee, Ferguson, and Tuke fully coincide with the views of the French neurologic school, which have been confirmed by the observations of Benedekt of Vienna, Müller of Grätz, Wastphal of Berlin, Sepilli, Maragliani, Maggiorini in Italy, and Schiff in Switzerland—the latter elaborating the theory that all originated from *rapid molecular oscillations*, and supported his views by many delicate experiments, more especially with a remarkable novelty, the instrument termed *toniodukstorium* of Kronecker, which, by means of fixed iron bars, acted on by two copper cylinders powdered with pitch, the number of longitudinal vibrations could be measured.

"This hypothesis is admitted by its author to lack the direct proofs necessary for a demonstration, but some day these proofs may arise."

The department of bibliografia nacional is occupied by notices of the theses of various students who have passed the examinations of the National School. Of these it may be said that they are uncommonly like the professional lucubrations of young medical gentlemen in other parts of the world,—"They have swallowed a large paunchful of instruction, but have not had time to digest much of it as yet."

ARTICLE VI.—*On the Antiseptic Treatment of the Zymotic Diseases.*

By A. D. MACDONALD, M.B., C.M. Edin.

WHEN attending the lectures of the learned Professor of the Practice of Physic in Edinburgh University, it struck me that antiseptic treatment was the true and rational corollary to the highly probable germ theory of infectious disease. Granted the germ theory to be true, it seemed to me to follow as naturally in medicine as in surgery, that the proper course to adopt was to kill the germs, or, if that be impossible without serious results to the patient, at all events to lower their vitality. In the Journal for June I briefly referred to the administration of carbolic acid in whooping-cough. Since writing I have had the opportunity of giving carbolic acid in six cases of scarlatina. Fully two months ago I had tried it in a solitary case.

The sulpho-carbolates used to be given in Edinburgh, but, unfortunately, they have fallen into neglect. Recently a German physician has treated typhoid fever antiseptically with good results; and equally favourable has been the subcutaneous injection of solution of benzoate of soda in yellow fever, where the multiplication of germs in the blood has been demonstrated to occur, thus adding another factor to the induction proving the germ theory.

As yet I have not felt quite confident enough to quit the apron-strings of Mindererus, but have given the glycerine of carbolic acid in combination. Six cases have been so treated thus far—two with copious rash and pretty severe sore throat. The dose given was one minim of the acid every four hours in one of the two, a young man of 19; a quarter to half a minim in the other cases, children. All have done perfectly well.

Now, what I have said by no means proves that carbolic acid is a remedy for scarlatina: long experience and strict investigation alone will do that; but, theoretically, it is good, and, practically, I have shown that carbolic acid may be safely given to scarlatinal patients. Thus there is a starting-point for further research. There is the fact to help us in selecting this as the scarlatinal antiseptic, that it has proved of some benefit in the, in some respects, analogous general exfoliative dermatitis. The variety of germs must necessarily be as great as that of the zymotics themselves, but there is also a variety of antiseptics as great as the variety of germs. We carefully attempt to destroy the germs in the air of the sick-room and discharges of patients by disinfectants. Why not also thus attempt their destruction in the body of the patient?

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION

Article VII.—*Treatment of Sloughy Ulceration of the Cornea.* By J. Crawford Renton, M.B. Ed., F.F.P.S.G., Assistant-Surgeon to the Eye Infirmary, and Extra-Assistant Surgeon to the Western Infirmary, Glasgow.

(*Read before the Medico-Chirurgical Society of Glasgow, 1st April 1881.*)

The following cases present the various features of a form of ulceration of the cornea which is of frequent occurrence, and in a city like Glasgow is liable to come under the observation of any medical man. On that account it is of greater general interest than some other affections of the eye which may be more safely entrusted to those making a special study of that organ.

I.—W. J., æt. 46, was admitted to the Eye Infirmary on 11th November 1880. Patient received an injury four days ago with a chip of iron, which struck the left cornea and has resulted in an ulcer. Considerable sclerotic injection and pain in the ciliary region. Atropine solution introduced; iris dilates irregularly. Compress and bandage applied. Patient ordered to keep his bed, and to have good diet with a pint of porter daily. Atropine solution to be used every four hours, and a pill with two grains of calomel and half a grain of opium to be given at bedtime to relieve pain.

1*st December.*—Ulceration extending by points, pus present in anterior chamber. Cornea incised at the lower and outer aspect, and curdy pus evacuated. Ext. of belladon. applied to the brow, with warm compress over the eye. Diet continued as abovementioned, along with two grains of quinine thrice daily.

3*d.*—Pain relieved, anterior chamber filling, and wound in cornea healed.

6*th.*—As ulceration had extended upwards, the cornea was again incised, with complete relief to the symptoms.

31*st.*—Cornea clearing; pain entirely gone. A cicatrix exists on the outer side of cornea, with the iris adherent to it at its lower and outer border. Patient dismissed, to return and attend at dispensary.

II.—J. N., æt. 46, admitted 30th November 1880. Patient states that his vision has been dim and his left eye very painful for a week. Did not receive any injury, but has had no work, and consequently insufficient food, for several months. At present there exists a sloughy ulcer on left cornea, with hypopion, the ulcer covering the greater part of its upper two-thirds. Cornea incised and pus evacuated, the same treatment, medicinal and dietetic, as detailed above in Case I. being adopted.

6*th December.*—Pus does not return. Eye quiet and ulcer healing.

12*th.*—Cornea begins to clear; no pain.

8*th January* 1881.—Pupil yields to atropine; vision improves. Dismissed.

III.—H. M. æt. 52, admitted 18th January 1881, suffering from a traumatic ulcer on the centre of the left cornea, with onyx, the result of an injury with a piece of iron three days ago. Cannot count fingers; severe pain in ciliary region. Cornea incised, the pus in its layers being evacuated, and the usual after-treatment ordered. The eye progressed favourably, and on 12th February patient was dismissed with good vision, and only a dim line marking the incision.

IV.—A. B., æt. 46, admitted 30th November 1880. States that he received an injury on the 26th, which was followed by severe pain.

30*th.*—Sloughy ulcer exists on right cornea, with onyx. Cornea incised, and the usual treatment recommended.

3*d December.*—Anterior chamber clear. Ulcer healthy; pain almost gone.

20*th December.*—Ulcer healed; cornea clearing. Pupil yields freely, and is non-adherent to the cicatrix.

V.—S. R., æt. 40, admitted 13th December 1880. Received an injury with a small piece of iron on the 7th. There exists an ulcer on the left cornea, with onyx. Compress and bandage, atropine drops, and usual generous diet ordered.

14th.—Ulcer extends; pus in the anterior chamber. Iris somewhat discoloured and contracted. Cornea incised, and warm compress applied over eye, with belladonna to supra-orbital region.

23d.—Case progressing favourably, slight protrusion of iris from wound.

30th.—Anterior chamber filling; pupil yields to atropine.

12th January 1881.—Eye quiet; wound completely cicatrized; pupil yields thoroughly.

Note.—Atropine does not act on the iris if there is collapse of the cornea from incision, injury, or rupture, even where the iris is perfectly free from the wound, because atropine introduced into the eye acts by paralyzing the peripheral nerves, and, consequently, must come in contact with them for a time, which it cannot do if there is no aqueous retained in the anterior chamber. In the above case the pupil did not dilate until the wound in the cornea healed. The collapsed cornea also acts mechanically in preventing the iris dilating or contracting more than it does at the moment when the aqueous is thoroughly escaped.

VI.—R. C., æt. 33, admitted 1st February 1881. Received an injury four days ago, since which time he has suffered severe pain in the left eye and in the supra-orbital region. His vision has gradually diminished until now, when he cannot count fingers. Sloughy ulcer exists on left cornea, with deep sclerotic injection and pain in the ciliary region. Compress and bandage, atropine drops, and calomel and opium pills ordered, as also usual diet for such cases.

7th February.—Ulcer seemed to improve at first, but to-day it has extended, and there is pus in the anterior chamber. Ulcer incised and pus evacuated. Usual treatment ordered.

12th February.—Eye quiet and ulcer healing. No pain.

25th.—Bandage removed; wound cicatrized.

1st March.—Dismissed with vision gradually improving.

VII.—M. R., æt. 24, admitted 1st October 1880. Complains of pain in, and a copious discharge from, left eye, which has existed for a week. Lids swollen, sclerotic injected, and cornea hazy, with ulceration passing round its border. There is a copious purulent discharge from the eye, the origin of which is a gonorrhœa of some weeks' duration. Boracic acid lotion (saturated solution) ordered, with atropine drops and ice compresses; the other eye carefully protected.

4th October.—The ulceration seems to be deepening, and I consulted with Dr Reid as to the advisability of incising the cornea. As the discharge was diminishing, the patient only 24, and her general health good, Dr Reid recommended me to delay incising and continue above applications, watching the progress of the ulceration carefully.

30th October.—The boracic lotion was used faithfully, the discharge continued to diminish, the ulceration did not extend, and the eye gradually recovered.

VIII.—A. B., æt. 18. Strumous-looking girl, admitted 6th February 1881. Has suffered from obstruction in the lachrymal duct, with purulent discharge from the sac, and consequent ulceration of cornea.

The caniliculus was slit open and a large probe passed, and thereafter boracic lotion employed, with the effect of curing the ulceration and improving the character of the discharge from the sac.

When an ulcer forms on the cornea it passes through three stages, which are so succinctly described by De Wecker in his *Ocular Therapeutics* that I quote shortly from that work.

1. Destruction of the corneal epithelial layer and exposure of the true corneal tissue, which begins to suffer and is surrounded by a gray zone formed by an infiltration of lymphoid cells.
2. The little slough of tissue, which varies, of course, according to the size of the ulcer, separates, leaving the ulcer at first irregular in outline and with jagged edges, but as infiltration disappears it becomes transparent, with its edges rounded off.
3. The process of healing or repair, in which the ulcer gradually assumes a brighter appearance, the epithelium passes over its surface, and the corneal tissue is repaired.

These stages undergo very frequently decided modifications, for instead of the healing process advancing satisfactorily, the ulceration continues, and will sometimes with great rapidity destroy the greater part of the cornea and ruin the eye.

The cases above described are illustrations of this severe form of ulceration, which has been called "sloughy" from the destruction of tissue which takes place; and if it presents a special character, to be afterwards described, it is styled serpiginous.

It occurs most frequently in persons above 40 who are in poor health from any debilitating cause, and even in those who seem to be well nourished. An injury of the cornea at that age is liable to assume this severe form of ulceration evidently from diminished vitality of the tissue and a want of recuperative power. Just as in other parts of the body, so in the eye, we find certain people who seem to be in fair health as long as nothing goes wrong, but whenever they receive an injury collapse takes place, lowered vitality, and destruction, partial or complete, of the tissues involved.

In the cases above mentioned five were above 40, and one was closely approaching that age. These all required operative interference, whereas in the seventh and eighth cases recovery took place more easily, doubtless in part due to the youth of the patients.

The principal exciting causes are:—1. Wounds; slight abrasions will sometimes lead to it, but more generally the true corneal tissue has been injured by a chip of iron, steel, or coal. You may have noted that in five of the above cases traumatism was the exciting cause of the inflammation. 2. By special infection, as in the irritation of the discharge from a lachrymal sac suffering from chronic inflammation or irritation, due to retained secretion, as in Case VIII., or by gonorrhœal ophthalmia, from which cause the serpiginous form is apt to occur, as in Case VII. 3. From a low state of the system this unhealthy form of ulceration commences, and runs a rapid course idiopathically, as in Case II.

In cases of severe ulceration there is generally, in addition to the unhealthy condition of the cornea, the presence of pus, either in its layers forming an onyx, or in the anterior chamber, when it is called an hypopyon.

The rapidity with which the process advances is very striking, as in twenty-four hours an ulcer which did not look severe and did not involve much of the cornea suddenly spreads, causing perforation and loss of the eye through subsequent inflammation, and gradual destruction of the iris and lens from malnutrition, or a staphyloma of the remaining cornea forms, dragging the engaged iris along with it, which not only destroys the eye injured or first diseased, but endangers the other from sympathetic ophthalmia.

In the serpiginous form of ulcer hypopyon is not so regularly present, and on that account it is sometimes deceptive from the insidious way it progresses; and, unless carefully examined, it might be mistaken by an unpractised observer for a dislocated lens, owing to the irregular refraction caused by the ulcerated edges.

In addition to the above appearances, the general symptoms of inflammation are intensified, and the character of the pain is periodic, severe, and situated in the supraorbital region as well as in the globe itself, its intensity being increased by pressure applied to the ciliary region. The tension of the eye is increased.

TREATMENT.—*Preventive.*—1. In all cases of wounds, abscess, or ulceration of the cornea, however slight, and wherever there is any doubt as to the depth of the irritation present, let two indications be carried out,—1. The instillation of atropine. 2. A protective bandage.

No one who is in the habit of seeing many cases of injuries or diseases of the eye should be without atropine, either in the form of solution, grs. iv. to the ounce of water, or as discs, which are made by Savory & Moore, and are easily carried, are always fresh, however long they are kept, and are so weak that the effect passes off soon, which is sometimes advantageous—as, for example, if you have suspected an iritis where there was none, it is often advisable that the dimness you have wisely produced should disappear quickly. Calabar bean discs are sometimes used, and are to be had in the same form as the atropine. Both are advised from one reason, viz., in order to put the eye in a state of physiological rest, either by dilating or contracting the pupil. They never do harm, and invariably do good; and if they were more used there would be less sloughy ulceration and perforation of the cornea. I have only seen poisonous symptoms produced in one instance by atropine instillation, probably for the reason I stated above, that the atropine only paralyzes the peripheries of the nerves, and does not act centrally when introduced into the eye.

2. *Protective Bandage.*—A pad of lint, with a single turn of a bandage to keep it in position, is the simplest form of protective support for the eye; the regular Liebreich's bandage, as used by ophthalmic surgeons, may be employed, or an ordinary piece of calico may be cut of the same shape if desired. In addition to limiting movement, it supports the eye and diminishes the tendency there is for the cornea to give way, being to it what a bandage is to an injured limb, hence the importance of applying it carefully and avoiding a large handkerchief, which is uncomfortable and overheating.

When the ulceration has advanced, as in the cases above described, what other remedies are of avail? Locally, fomentations with ʒj. of extract of belladonna to the pint of hot water, frequently repeated, and atropine solution or ointment, which consists of a grain of atropine in a drachm of vaseline, introduced regularly every four hours. The fomentations have the power of altering the character of the ulceration, and, when not continued too long, are highly beneficial. In addition the regular use of a purifying lotion, such as boracic acid, 260 grains to the pint of water, which being a non-irritant and a good antiseptic, acts well when there is any purulent discharge, as is shown in Cases VII. and VIII.

Internally, quinine and iodide of potassium (the latter more especially if pus is forming) are useful. Pain is to be relieved and iritic symptoms treated with two grains of calomel and half a grain of opium twice or thrice daily. Good diet must be ordered from the first.

If the pus in the anterior chamber increases and the amount of ulceration of the cornea is not great or deep, then performing paracentesis of the anterior chamber is sometimes sufficient to induce healthy action.

All ophthalmic writers refer to this method of treatment, but not with great confidence, except in a few cases, as to the result, and all are agreed as to the very serious nature of the form of ulceration to which we are referring.

It is to Professor Sæmisch of Bonn that we are indebted for introducing a form of treatment for the most severe form of serpiginous ulceration, and the brilliant results it has produced are one of the greatest achievements of ophthalmic surgery.

Sæmisch noticed that when a patient was suffering from this disease, the moment the cornea gave way immediate relief followed, with disappearance of all the severe symptoms above enumerated. The rupture, however, did not take place in many cases until the cornea was entirely destroyed and the eye was therefore lost. He said, "Can we not, by anticipating nature, help her?" He accordingly incised the cornea, passing a narrow knife through sound corneal tissue on the outside of the ulcer, entering the anterior chamber, and bringing the point out on the inside of the ulcer in good corneal tissue, and then cutting outwards—in other words, incising the base of the ulcer. Sæmisch recommends that the incision should be opened by a probe daily until the healing action is induced. This, however, refers more particularly to serpiginous ulcers, in which the treatment is specially recommended.

If the incision is practised early in sloughy ulceration, in which it is now very generally used, as well as in the serpiginous form, and atropine, or eserine, which is advised by some in preference to the former, faithfully used, along with a good diet into which porter is allowed to enter—a point upon which the late Dr M'Kenzie used to insist—a very decided improvement will generally be found in the condition of the eye even the day after the operation. The pain is gone, the pus is evacuated, and if the wound is healed the anterior chamber is filling, and the swollen edges of the ulcer look less irritable. Rest in bed, with careful bandaging, must be enjoined, with attention to the general state, and in ten days cicatrization will be found advanced and the ulcer gradually healing. When it has healed there will be left the cicatrix, which slowly becomes thinner, and a slight scar where the incision passed through. Sometimes the iris is adherent to the cicatrix, as in Case I., in which this occurred from the severity of the inflammation, and the great advance the ulceration had made previous to operation. An iridotomy and iridectomy are sufficient to correct this, and ought not to be delayed too long, as from the dragging on the iris in anterior synechia changes are apt to take place in the injured eye which may lead to a greater impairment in vision both in it and the sound eye.

How does this corneal incision produce such good results? 1. It relieves tension. 2. It evacuates pus. 3. It affords a drain for discharge through the wound. If the wound should heal, it is easily, in the first two or three days after the operation, opened by a probe; this, however, unless in very severe cases, is seldom necessary. In Case I., instead of opening the wound I again incised, and the result was quite satisfactory.

It may be argued that you do not in every case ensure good vision, but by this method you diminish greatly the chances of sympathetic ophthalmia by preventing the engagement of the iris in the wound, unless in severe cases in which iridectomy is afterwards necessary, and you put the eye in the best condition for recovering fairly good vision.

There are other methods of treatment recommended for severe corneal ulceration. De Wecker has advised and carried out with satisfaction to himself the operation of sclerotomy, more especially in extensive ulceration, as he finds that keratomy or incision of the cornea is best suited to limited sloughy ulceration. His operation is performed with a linear knife carried through the sclerotic, an eighth of an inch from the corneo-sclerotic junction, right across the anterior chamber and through the corresponding point of sclerotic, the incision is then carried downwards for the breadth of the instrument, which is then withdrawn. Although this does not evacuate the pus, still the relief to tension and escape of aqueous leads to a process of healing, and results in a smaller cicatrix than in keratomy.

Martinach has recommended that a red-hot probe be applied to the ulcer, but of this I cannot speak. Thus we see that either Sæmisch's method or De Wecker's is the best, and the results are so satisfactory that I feel confident that any one giving them a fair trial will have every reason to be gratified.

ARTICLE VIII.—*On the Treatment of Laryngeal Phthisis.* By Dr MAURICE SCHMIDT, of Frankfort-on-Maine. Delivered at the Congress of Laryngology at Milan, September 1880. Translated by J. J. KIRK DUNCANSON, M.D.

GENTLEMEN,—Allow me to call your attention for a few minutes to this terrible malady, which is a plague not only for those who are attacked by it, but also for conscientious physicians who are obliged to treat them. Up to the present time the treatment has almost always been limited to relieving the sufferings of these patients as much as possible.

I have published, a few months since, in Ziemssen's *Archiv für Klinische Medicin,* an article on this disease. As I cannot suppose this to be known to all the gentlemen present, I would like to mention several points of pathology and diagnosis before speaking of the treatment.

I have never noticed primary laryngeal phthisis without affection of the lungs; but I do not deny the possibility of its existence. I distinguish three forms. The first is the true corditis (*la cordite vraie*) of the inferior vocal chord. It is not characteristic of phthisis, as it can be equally catarrhal and syphilitic. It terminates in superficial or deep ulcerations caused, as I believe, in most cases by the wear produced by the friction of the other vocal chord, which at the beginning is rarely affected. The second and third forms are superficial and deep ulcerations. With these three forms may be combined tuberculosis, infiltration, œdema called collateral, and scleroma.

Naturally we often find these three forms combined. I will not enter into the microscopic details here which have been so well described by M. Heinze. He has not given you a definite solution of the matter, the opinions of authors being still too controversial upon this subject. Neither will I speak to you of the laryngoscopic image, which you know only too well. As regards diagnosis, the only and great difficulty exists in the differential diagnosis of phthisis and laryngeal syphilis. You all know this difficulty, caused by the similarity of morbid changes in the larynx, by the difficulty of a true anamnesis, and by the possibility of a combination of these two maladies. I have found it advisable in doubtful cases to give for a week, iodide of potassium, in large doses, from 47 to 93 grains (3 to 6 grammes) daily. In the cases of syphilitic ulcerations, we will see, it produces, by this time, a marked improvement.

The results which I have obtained in the treatment of laryngeal phthisis are 19 cases of complete cure out of 315 cases which I have seen during the last three years, that makes almost six per cent. By complete cure I mean a cure of the larynx *and* of the lungs. During the present year I have seen 87 cases with 9 cures. Of course I do not declare these 9 cases definitely cured, but they are for the present. The 19 cases of the three previous years remain cured up to the present time. If you consider that I have only really treated, for a sufficient time, about a third of these 315 cases, the others never returning after the first consultation, you will agree that, notwithstanding, it is a large proportion of cures in this fatal disease. As to the accuracy of the diagnosis, I must appeal to your confidence. I repeat, all the patients had affections of their lungs.

The treatment which I prescribe contains nothing new, the free scarifications excepted. All the other remedies have already been employed by other physicians. The treatment is divided into two parts—the treatment of the lungs and that of the larynx. As to the first this is not the place to discuss it. My experience has shown me the superiority of non-medicinal treatment, physiological if you like.

I would like to say in a few words what this treatment is which I make my patients carry out.

1*st*, Constant residence in an atmosphere as pure as possible both day and night. I induce my patients to keep their windows open during summer or half-closed during winter. I send those who have means into the mountains, the forests, or to the country. I only make one exception, for patients attacked with an inflammation of the larynx, however slight, with whom the climate of the high Alps does not appear to me to agree.

2d, Exercise of the lungs, suited to the strength of each patient, to facilitate the expulsion of mucus, and to induce the patients to profit by what remains of their lungs to promote hematosis.

3d, To stimulate the functions of the skin by dry rubbings or by bathing in cold water. A secondary benefit of this remedy is that the patients are hardened against changes of temperature.

4th, A good mixed nourishment, not exclusively animal. During summer, milk cure; during winter, large doses of cod liver oil, if the patients can bear it, if not they are replaced with food of a fatty nature. Treatment of the affections of the stomach.

We have had for some twenty years in Germany several establishments where these cures are carried out under the constant supervision of a doctor; for example, that of the inventor of this method, M. Brehamer of Gœrbersdorf in Silesia; that of Falkenstein, near Frankfort, etc. Lastly, the establishments at Davos, in which, however, the climate is not so favourable for patients with laryngeal phthisis. The results of the cures at these establishments are very favourable in respect to the cure of the lungs.

The treatment of the larynx demands above all on the part of the patient complete silence. I admit that it is not always very easy to obtain this, the morbid loquacity of the phthisical being only too well known.

As for the nourishment, it is specially necessary to avoid everything irritating. In serious cases a semi-solid nourishment is preferable to a fluid.

The medicinal treatment of laryngeal phthisis consists at first in the employment of the antiseptic method. This is also adopted by a great number of specialists in all countries.

It is absolutely necessary that we entirely abandon cauterizing the parts at a venture and without inspection, and the employment of energetic topical remedies. I only allow them in cases of large ulcerations of the epiglottis in the last stage, so as to produce a protective layer, which sometimes relieves the patient for some hours. In cases of too abundant granulations, which impede the cicatrization of the ulcerations, I employ weak solutions of caustics, and only for the end mentioned and for a restricted time. We employ the antiseptic method for the larynx in different ways, principally by inhalations of carbolic acid in instillations of glycerine and carbolic acid.

I have found a very cheap and easily administered remedy in the balsam of Peru—that is to say, in the benzoic acid which it contains. I order it to be inhaled three to four times a-day for five minutes in the following manner. We take half a litre (about 18 oz.) of boiling water (the heat of which is kept up by being placed over a spirit lamp), and into which is put 10 drops of the following mixture,—balsam of Peru, 10·0; spirits of wine, 5·0.

The patient inhales through a sort of conical funnel, made of a sheet of cardboard paper, one metre in length (nearly 40 inches). The width of the funnel at its upper end ought to fit the mouth; at the lower it ought to be the size of the vessel containing the water. Naturally the inhalations must be continued for some time, from one month to a year. It is good to change the remedies for some days every two months. The effect of these inhalations varies according to the cases.

Sometimes with or before the cure of the ulcerations the tuberculous infiltration disappears. In the most of cases it is necessary to employ other means to combat the infiltrations. The surest remedy, according to my experience based on a large number of cases, is to make free scarifications, of course, in the upper part, across the whole posterior wall of the larynx. At first I performed these scarifications for another object, and it was only by degrees that I became convinced of their great utility in curing infiltrations. Now I make them as soon as I see that the infiltrations do not diminish in three or four weeks with the inhalations. Most medical men fear to make such a wound upon a phthisical larynx. It was with the same feeling that I made them the first time, but I am convinced that they are not at all injurious, but, on the contrary, they contribute very much to the healing of these affections.

For a long time scarifications have been recommended for acute œdemas of the larynx, and they have always been advised to be made freely. It is the same thing with chronic œdemas. It is all the more necessary for them to be freely made, as chronic œdemas are not resolved so quickly, and the wounds ought to remain open for some days. Generally—I ought to say unfortunately—they are healed up at the end of three or four days. The small pricks from a knife are already agglutinated after some hours. I advise the incisions to be made with the form of scissors which I show here; they are closed after the manner of a tonsillotome, by drawing the two parts the one against the other. The scissors are introduced behind the epiglottis closed, they are then opened, the one branch is pushed down into the larynx, the other into the œsophagus. The larynx is raised in the throes of retching, and what of the posterior wall that is between the branches is cut. The pain from the operation is not much, and does not last long; there is very little bleeding in general. It is very rarely necessary to cut a second time.

I have not spoken to you of the affections of the epiglottis. I have never seen them cured, some cases of superficial ulcerations excepted. The free scarifications made with a probe-pointed curved knife relieve the patients also in these cases for a shorter or longer time. It is evident that, in the cases of deep ulcerations of the vocal chords, after their cure, there is not always a complete restoration of their function. If the chords are deformed by cicatrices the voice does not again become clear, but remains more or less husky. After some years the chords may lengthen until they resume their natural aspect. Even under these conditions we may consider them as cured just as much as in many other cases the patient is, so to speak, re-established without having recovered the complete use of all his organs.

I conclude, gentlemen, in once more recommending to you the above-mentioned treatment. You must, in the first place, rid yourself of the idea that this disease is positively incurable; and if you give yourselves the trouble to treat it in a rational manner and without losing patience, I am sure that you will have the satisfaction of verifying more examples of cure than you would believe. I will be happy in having taken the initiative, and I leave to my more skilful colleagues the care of perfecting the treatment which I have had the liberty of submitting to your judgment.

ARTICLE IX.—*The Use of the Catheter before Forceps-Delivery.* By JAMES MORE, M.D., Fellow of the Edinburgh Obstetrical Society.

(*Read before the Edinburgh Obstetrical Society*, 13th *April* 1881.)

IN most if not all the works on obstetric surgery, the use of the catheter before forceps-delivery is strictly enjoined. Although this precautionary measure is sometimes imperatively demanded, still we cannot help thinking that to dignify it by placing it in the position of an invariable rule—a rule never on any pretext to be infringed or broken—is little short of an anachronism.

Catheterism is thus recommended, or rather enjoined, to provide against the contingency of a distended bladder, with all its consequences.

Of this complication I think we are justified in maintaining—1st, That it is very rare indeed. 2d, When present, that it is almost invariably a consequence of protracted labour. 3d, That as forceps-delivery in the present day is recommended before labour can be said to be protracted, this complication becomes at once eliminated, and is, in short, put out of court.

The anatomical and physiological conditions of this viscus *during parturition* would of themselves render over-distention a matter of extreme rarity, and this for the following reasons:—1st, The renal secretion is for the time diminished (Parkes). 2d, The bladder space or capacity is also diminished. 3d, The inclination to urinate, and thus partially empty the bladder, is almost invariably a prominent symptom of even natural labour. Apart from these conditions, the mere facility with which bladder distention can be detected would render its hidden existence a matter of extreme improbability, and thus, of course, weaken the force of the classical rule.

When the parturient patient is unable to empty her bladder, or, more properly speaking, to pass water, symptoms of a special kind very soon arise, which cannot fail to lead any accoucheur of experience to detect this complication. There is a peculiar accentuation of the pains of labour contraction, localized to the space above the pubis, and the distended bladder can be felt, and even seen, as a characteristic tumour. That the renal secretion is very much diminished during the act of parturition cannot for a moment be doubted. The vesical tenesmus, or constant desire to micturate, must be disassociated from the quantity passed—as a matter of fact, though the calls to urinate are frequent and often distressing, not much water is passed in a given time.

In reference to the excretion of urine Fothergill says: "There is, indeed, rather an exosmotic than a vital action going on in the Malpighian tuft, and the flow of water through the thin-walled glomeruli is almost a question of hydraulics; the greater the pressure on one side, the more rapid the flow: the lower the pressure, the slower; but if the pressure on both sides be equal, as when the flow of urine through the kidney is arrested by a calculus in the ureter, then the flow ceases, and there is a standstill of excretion."[1]

It is unnecessary to point out that during the muscular contractions of the uterus, backed up as these are by extreme abdominal tension, the pressure on both sides of the Malpighian tuft must be equal, and thus lead to arrest of urine excretion during each labour pain. As an argument in favour of the idea that during labour the excretion of urine is diminished, we might cite the researches of Ustimowitsch. He says: "The relative quantity of the several constituents of the urine varies with differences in the pressure of the blood in the vessels when it is excreted, and with the resistance that the urine meets with in its discharge by the ureters. Moreover, probably by its action on the nerves, it causes a diminution or absolute arrest of the secretion when the system is fully under its toxic influence."[2] In parenthesis, I would ask, Are not the symptoms of uræmic poisoning strangely like those rising in protracted labour from impaction?

Again, Dr Johnson, in his *Lectures on Bright's Disease*, says: "For the due performance of the secretory function (of the kidney), and for the maintenance of its nutrition, it is essential that the blood move freely through the gland. An impeded return of blood through the veins involves as a necessary consequence a partial blood-stasis, and, as a result of this, a scanty secretion of urine."[3]

Hermann performed experiments on the blood pressure as influencing the secretion of urine, and found that "it is not the diminished rapidity of the current of blood, but the diminished pressure, which causes a proportionate diminution in the secretion of urine; and as secretion ceases altogether when a certain minimum of pressure is attained, so also, when a certain maximum of pressure is surpassed, does the urine assume abnormal qualities."[1]

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[1] *The Practitioner's Handbook*, p. 389.

[2] *Year Book*, Sydenham Society, 1871-72, p. 19.

[3] Page 116.

Apart from the *sustained* pressure (by the fœtus) on the renal and abdominal veins during pregnancy, the increased though intermitting pressure arising during the act of parturition must materially influence the excretion of the watery elements of the urine. The etiology of puerperal albuminuria would also seem to indicate that during the later months of pregnancy there is such pressure on the vena cava inferior, the renal and other abdominal veins, that obstruction to the returning circulation in the kidney takes place, with its consequent alteration in the quality and diminution in the quantity of the renal excretion. Dr Johnson on this point says: "In the advanced stages of pregnancy the pressure of the uterus on the veins may cause passive renal congestion and albuminuria: the urine becomes scanty in proportion to the degree of venous congestion, and the consequent tardiness of the blood-stream through the kidney."[2]

During parturition all these factors must necessarily be increased, and during protracted labour suppression is as much to be dreaded as the retention of the kidney secretion. Any cause which keeps up the vascular tension in the abdominal veins, determines progressive stagnation in the renal as well as the peripheral capillaries—this stagnation, as pointed out above, must to a certain extent equalize the blood-pressure on both sides of the Malpighian tufts, and for the time arrest secretion. Thus is partly explained the compensatory varicosity and œdemas of the limbs, the diminished excretion of the watery elements of the urine, and the occasional super-albuminosis seen during the later months of pregnancy. That mere pressure in the abdominal veins is an important factor in influencing the amount of the renal secretion during parturition may well be imagined when we take into consideration "the marked influence which a *first* pregnancy appears to have in the production of albuminuria." As Cazeaux points out, the resistance of the walls of the abdomen (in primiparæ) increases greatly the pressure sustained by the parts behind the uterus. Thus is explained, also, the rapidity with which albumen frequently disappears after labour, and also the great increase in the urinary excretion. According to Parks,[3] during the first five days after delivery both the water and urea of the urine are increased.

This sudden and great increase in the quantity of urine passed after delivery is a matter of common observation, and I have noticed that where the pressure on the abdominal veins has been more than usually great, as in twin pregnancies, and in cases where there has been an excess of the liquor amnii, the amount of urine passed has been proportionately great. As evidence in the same direction, I may be allowed to quote Francis Ramsbotham, who, under the section "Rupture of the Bladder," says: "The kidneys, under lingering labour, rarely secrete the same quantity of urine in the same space of time as they are accustomed to do in the ordinary states of the system, because much of the fluids is carried off by perspiration, etc."[1]

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[1] *Year Book*, p. 27, 1862. [2] *Lectures on Bright's Disease*, p. 115.
[3] *On Urine*, p. 105.

That vicarious interchange of function between the skin and kidneys may exist to a certain extent, I have no doubt; but I think the evidence mostly tends to show that the diminution of the urinary secretion which undoubtedly obtains during the process of parturition is teleologically (if, in this advanced age of synthetic science, I may be allowed such an old-fashioned word) provided for in the physiological pressure on the renal and other abdominal veins.

Again, we have drawn attention to the fact that during labour the bladder-space for the storage of urine is, like the secretion itself, diminished. "The vesica urinaria," says Smellie, "in pregnant women near their full time, is often so much pressed by the uterus that it will contain but a very small quantity of water," etc.[2] This might be urged as a reason why greater care should be taken by the accoucheur to guard against urine accumulation. But if we take into consideration the manner in which the vesical capacity is diminished, we shall see that not only is bladder-distention less likely to arise under this altered shape, but, when it does arise, there is less risk of rupture to the viscus, and less chance, let me add, of the accumulation interfering with the progress of the labour.

During pregnancy, and of course during parturition, the bladder becomes flattened from before backwards. "When a retention of urine takes place in the latter months of pregnancy, as the water accumulates, the bladder cannot enlarge equally in all directions because of the resistance which it meets with posteriorly from the gravid uterus: it therefore assumes a flattened form, and spreads upwards and laterally to a great extent over the anterior part of the uterus."[3] During the progress of labour, when the expulsive efforts are in force, this flattening of the viscus is carried to such an extent that the bladder or storage space is represented by a mere slit.

No sooner does any urine distil from the compressed ureters into the bladder than it is pressed upon by the advancing fœtus and the abdominal muscles, when it is either passed involuntarily during the force of the pains, or voluntarily during the force of a frequent and urgent vesical tenesmus. Of the frequent and urgent inclination to pass water there is no need to speak, for every accoucheur will bear me out in the assertion that it forms one of the most prominent symptoms, or, rather, accompaniments of advancing labour. Of the involuntary draining away of urine in labour, apart from pathological lesion, there is not the same decided evidence; and, of course, where the head is impacted in the pelvis and pressing on the neck of the bladder, such a thing is impossible.

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[1] *Obstetric Medicine and Surgery*, p. 604.

[2] *Smellie's Midwifery*, N. Sydenham Society Edition, vol. i. p. 158.

[3] Lowder's MS. *Lectures*, as quoted by Gooch, p. 119.

Anatomically speaking, the female urethra (including its neck) is a much simpler mechanism than the same canal in the male. The neck of the female bladder is absolutely free, being loosely surrounded by cellular tissue, while that of the male is encircled or guarded, and, in a sense, throttled, by the prostate gland. Again, the opening into the male bladder is not so low down as that of the female: indeed, the urethra pierces the female bladder in its most dependent part. It follows from this arrangement that pressure, as of the fœtus, will tend to keep the bladder more or less empty. Did the urethra enter the bladder in any other situation than its most dependent part, pressure, instead of emptying the viscus, might burst it.

Again, we know that the female bladder, like other sphincter-guarded cavities, is more or less richly supplied by ganglia, which provide for the voluntary custody of its contents. Pressure, we know, will numb, and, in time, partially paralyze these ganglia; thus the pressure of the fœtal head on the nerves supplied to the vesical sphincter will provide for the physiological paresis of this muscle and the consequent draining away of the urine. In short, pressure does here much the same as division of the cord.

Having thus far seen that distention of the bladder during parturition is a complication presumably not likely to arise, it may be instructive to inquire what real justification there is for this classical enforcement of the rule of catheterism. Setting aside certain well-defined instances where bladder distention does arise, the history of forceps-delivery would seem to indicate that it is only in protracted or tedious, and, let me add, neglected labour, where large and dangerous accumulations of urine take place. In the reign of terror, the era of expectancy, when the forceps was used only as a *dernier ressort*, we often meet with this complication mentioned as existing. Typical of this era, let me examine the classical experience of Robert Lee. In his *Clinical Midwifery*,[1] portraying the histories of four hundred cases of difficult labour, the catheter is mentioned as having been necessary in six or eight cases. There is no evidence to show whether the catheter was used before every forceps case, and in eight only is this prodromous operation mentioned. Bringing our point to the front, here they are:—

Case 32. Patient three full days in strong labour. Bladder filled with urine. Catheterism.

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[1] Churchill, 1842.

Case 45. Two and a half days in labour. Catheter required. Inflammation and sloughing of vagina followed.

Case 62. First labour, seventy-two hours' duration. Retention of urine. Head compressed in the brim. Great inflammation and sloughing. Died.

Case 63. First labour, liq. amnii discharged six days. Pains strong and regular during twenty-four hours. Head fixed in the brim. Bladder distended. Catheter cannot be passed. Patient recovered.

Case 84. Three days in labour. Bladder filled with urine. The head greatly swelled and compressed, firmly fixed in the brim. Sloughing of vagina and a fistulous communication between it and the bladder.

Case 93. A case of very tedious labour. Bladder enormously distended. Head had been long wedged in the brim, and the soft parts hot and swollen. Catheter could not be passed into the bladder till the volume of the head was lessened. Died of inflammation of the bladder.

Case 95. Patient forty-eight hours in labour. Retention of urine, and great swelling of vagina and head of child. Catheter passed, not into bladder, but into uterus.

Case 96. First labour, three days and nights' duration. Retention of urine. Head firmly impacted in the brim, and swollen. Sloughing and vesico-vaginal fistula.

Case 106. Protracted labour. Retention. Catheter could not be passed.

These were not all forceps cases, but they forcibly illustrate two things—the rarity of distended bladder, and its association with protracted labour.

As belonging to the same expectant era, I have gone over the forceps deliveries occurring in the Dublin Lying-in Hospital during the period of seven years commencing November 1847. The general features are much the same as in Dr Lee's cases, and are as follows:—

No. 36. Forty-six hours in labour. Bladder enormously distended with urine. Relieved by the catheter.

No. 41. Forty-two hours in labour. Bladder enormously distended. Two quarts of urine drawn off by the catheter.

No. 131. Twenty-two hours in labour. The bladder full, and evacuated by catheter.

Looking at our subject from the historical point of view, we notice—1. That catheterism before forceps-delivery is very seldom mentioned as part of the treatment. 2. Very few cases of injury to the bladder are recorded as resulting from non-catheterism. 3. When catheterism is mentioned as necessary, or rather as having been employed, it is always in cases of protracted labour. This being so, we are driven to one of two conclusions: either that the catheter was used in every case of forceps-delivery, but only (for some inexplicable reason) mentioned in connexion with these cases of protracted labour, or that the catheter was used only in cases of protracted labour, and where there were evident symptoms of distended bladder.

Whichever view is taken, it is equally antagonistic to the rul of prodromous catheterism in forceps-delivery. Because, if th catheter was used in each and every case, it was only in the case mentioned where there turned out to be any justification for it employment. In other words, it was only in such cases that distention was relieved, because it was only in such cases where thi complication was found. And, of course, if the catheter was use only in the cases mentioned, then I hold it was used legitimately, and only as it ought to be—*i.e.*, where there is distended bladder. Plainly, these histories teach us that distention of the bladder during parturition is not of very common occurrence, and when it does crop up, it is only in the presence of a terribly protracted labour.

Again, it may be urged that as catheterism has always, and by every one, been considered an essential part of forceps-delivery, it would not be thought necessary to note its use. But why note the cases in which it had been used, except to accentuate the fact that a distended bladder had been found? Every one must regulate his mode of practice according to the principles which form the basis of his knowledge. Thus, if a man dreads the use of the forceps, in other words, is "an expectant," by all means let him use the catheter before every forceps case, for undoubtedly he will use forceps in a large proportion of cases of protracted labour. On the other hand, if he goes on the principle of shortening the duration of labour, as soon as that is possible and consistent with the mother's and child's safety, then he will find that catheterism is unnecessary, for the complication for which this is required is eliminated from his practice. If catheterism is necessary before forceps-delivery (looking at the latter in the light of advanced obstetrics), then must it be equally necessary before every labour.

A rule cannot be said to be founded on a scientific basis where its infringement leads to no untoward results, or where there is no compensation to the operator for the trouble of operating, or to the patient for submitting to the disagreeable necessity of its performance. It may seem heterodoxy to ignore or call in question a rule of treatment the main object of which is the enhanced safety to the patient during operation. But an operation like forceps-delivery, in itself safe and easy of accomplishment, may be rendered unnecessarily cumbersome to the surgeon and disagreeable to the patient by the addition of doubtful and disagreeable details.

If, then, there are doubts as to the necessity of catheterism; if this prodromous operation is dreaded and disliked by the patient, and in this dread and dislike becomes a bar (on the patient's part) to the more important operation of forceps-delivery; if this apparently uncalled for operation is one of difficulty (and it very often is, when it is most required) and uncertainty to the operator, and in this difficulty and uncertainty becomes a bar to the recommendation and use of the forceps where they are undoubtedly called for, then I maintain that in any or all of these counts catheterism should not be enforced as an invariable adjunct to the simple operation of instrumental delivery.

Everything which has a tendency to handicap an operation, either in its moral or in its surgical aspects, should be avoided. Undoubtedly it is a troublesome, and sometimes a difficult thing, to pass a catheter when the head is impinging on an elongated urethra. It is undoubtedly, also, a disagreeable operation to the patient, and often involves exposure of the parts for its easy accomplishment. Natural delicacy will often lead the patient to dread and avoid this proceeding; and if it is to be a *sine qua non* of forceps-delivery, the latter will be, as a consequence, dreaded and objected to, to the danger of patient and offspring.

Any accoucheur in extensive practice, either in town or country, will, of course, come across cases of tedious and protracted labour. Knowing that certain complications are likely to arise from this very protraction, it becomes his duty to provide for these. One of the most prominent, and, I had almost said, the most serious complication, is, without question, urine accumulation. We have shown that this complication is relatively rare, but we do not mean to assert that it never does arise, or that it need not be eagerly watched for.

When called to a case which has been for some time in the hands of a midwife, or a case which from any cause comes under the class of lingering or protracted labour, one of the first things I consider as necessary to be done is to inquire into the state of the bladder. If, on examination, I find that my patient has been passing water,—that she has, in short, the usual, and, I might say, the physiological vesical tenesmus, and that there is no physical evidence of distention of the bladder,—I proceed with the delivery (instrumental, if required), feeling comfortable and satisfied that no bar to the safe instrumental delivery exists. Out of over two hundred forceps-deliveries, I have not yet been obliged to use the catheter, either before or after labour, in more than four cases. Nor can I recall to my remembrance one single instance where my patients have suffered, either in the bladder or otherwise, from this course of treatment. Nor can I look upon my experience in this respect as coming under the category of coincidence or luck, for, on questioning any of my immediate confrères, I find that the use of the catheter before forceps is quite the exception, and not the rule.

In further justification of this line of practice, I may mention that Dr Hamilton of Falkirk, who, in a certain sense, may be looked upon as a representative man in this department of obstetric surgery, made the following statement before the Obstetrical Society of Edinburgh in November 1878. As it may have a certain historical interest, I give the quotation as it appears in the abstract of the Society's proceedings: "In answer to a question put by a member as to the effect this mode of delivery had upon the bladder, Dr Hamilton stated that neither before nor after delivery had he had occasion to use the catheter for thirty years. The first, evidently, because he never allowed time for the head unduly to press on the neck of the bladder; the second, because his instrument never injured the parts of the mother."

The evidence of Dr Hamilton in this respect is peculiarly valuable; for not only is it the experience of a long series of years, but his very method of operating would bring to the front any latent danger there might be in using forceps without first emptying the bladder of its contents. In applying his instrument, he does not take the oblique grasp of the head, but, using straight forceps, he seizes the head in its lateral aspects and turns "the flat side of the forceps round the pubis." He thus applies the instrument in the antero-posterior diameter, and it is needless to add, that in this grasp the bladder and urethra would be more easily injured than when they are applied laterally in reference to the pelvis. But for thirty years he has not had occasion to use the catheter for distention of the bladder, and the explanation of this apparent anomaly is simply because he uses them in the ratio of one in seven or eight cases, and, of course, before anything like protracted labour (with its consequent complication) can take place.

Catheterism is recommended, and is indeed obligatory, in circumstances which should not be allowed to arise. The early and more frequent use of the forceps will undoubtedly in time eliminate this rule from the code of obstetric practice. A labour that is not advancing at a physiological rate has for one of its earliest and most prominent symptoms an increase in vesical tenesmus. That vesical tenesmus exists as a prominent symptom during the progress of tedious labour cannot be denied; that this inclination to urinate will be very much increased, and in time arrested, in cases of protracted labour, can also be very well imagined. The impacted head comes in the first place to press on the neck of the bladder: urination is now hindered or arrested, and distention to a greater or less extent takes place; the distended bladder rises as a large flattened tumour above the pubis, quite apparent, be it remarked, to the sense of touch, and even of sight. This floating upwards of the balloon-like swelling puts the urethra on the stretch, and if impaction is allowed to go on we have those cases ending in vesico-vaginal fistula. This accident, I am glad to say, I have never yet met with, for the simple reason that the conditions under which this grave complication is only possible are not allowed to formulate themselves. Even the midwives and amateur nurses in my neighbourhood know well from experience that delay to delivery will not be tolerated beyond a certain time, so they generally advise the doctor being sent for.

In reference to this most deplorable of all bladder injuries, Dr West makes these pertinent remarks:—"There can be no doubt that this accident is due to the delay of instrumental interference in tedious labours, coupled with the omission to use the catheter."[1] But I hold that the use of the catheter can only be entertained where the use of the forceps has been too long delayed, and that where forceps are used as they ought to be the necessity for the latter will seldom arise.

Why allow our patients to drift into a state where such a disagreeable operation is required? Operate in time; apply the forceps before the labour becomes tedious, and before the bladder becomes distended, and we do away with the necessity for the catheter. I do not deny that distention of the bladder may exist even as an initial symptom in ordinary labour. Thus Dr West says "that acute cystitis is far from being a rare sequela of any of the more active forms of abdominal inflammation, in women of all ages and in all circumstances."[2] With a bladder in a state of either chronic or acute cystitis we can well imagine distention taking place, and that without any undue pressure either on the viscus itself or on the urethra. But these cases are not by any means common, and when they do arise they are sufficiently well marked, and do not need prodromous catheterism to detect them.

And again, it is urged that neglect of catheterism may lead to serious bladder disturbance after labour. Dr West says, "Many of the cases of cystitis after delivery are traceable to neglect of the very obvious precaution of introducing the catheter when labour is at all protracted, or whenever the pressure on the neck of the bladder has been so considerable as to render micturition for a day or two painful or difficult." If this quotation proves anything, it certainly proves that cystitis of a painful kind may arise in protracted labour, or in cases where the pressure on the neck of the bladder has been so considerable as to render micturition painful. I would again reiterate the principle that the forceps should anticipate the states in which this complication can arise.

Though objecting to the use of the catheter before forceps-delivery as being a necessity, I am at one with those accoucheurs who hold that the bladder should have a careful and intelligent attention in all cases, whether of natural, tedious, or complicated labour. And this attention, I think, is more than ever necessary in all cases of cross-presentation. Though easily detected in head presentation, one can easily imagine how it may not be so manifest in cross-presentation. Here the bladder might have room for great distention, and that without showing its characteristic tumour above the pubis. We should see, therefore, by catheterism or otherwise, that there is no large accumulation of urine before proceeding to operate in these presentations. A distended bladder would, of course, impede the operation of bipolar version, and, in the old method of turning, might lead to bursting of the viscus.

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[1] *On the Diseases of Women*, p. 608.

[2] *Ibid.*, p. 604.

In conclusion. A rough analysis of the above remarks brings prominently forward the following ideas:—1. Distention of the bladder, as a complication of ordinary labour, is very rare. 2. Clinical evidence would seem to indicate that it is rare even in tedious labours. 3. When present it is generally as a symptom or complication of greatly protracted labour. 4. The more frequent and early use of the forceps, by eliminating this complication, does away with the necessity of prodromous catheterism. 5. Distention of the bladder, from its symptoms and physical signs, is readily enough detected without the surgeon being obliged to resort to the disagreeable operation of catheterism. 6. Catheterism should be used intelligently, and not empirically, *i.e.*, according to the nature of the individual case, and only where there is accumulation of urine. 7. This operation, being one of difficulty without exposure, and thus running counter to the feelings of delicacy of the patient, becomes a bar to the legitimate and early use of the forceps. 8. The early use of the forceps, eliminating as it does most, if not all, the more important complications of parturition, should not be unnecessarily handicapped by disagreeable and questionable details.

The conditions in which I would consider it necessary to attend specially (by catheter) to the state of the bladder are as follows:—1. The fact of the parturient patient not having passed water for some time. 2. The existence of a supra-pubic tumour other than the fœtus. 3. Extreme pain during contraction of a character disproportionate to the expulsive efforts. 4. The sudden cessation of the uterine pains. 5. Protracted labour with or without impaction of the head. 6. The presence of vaginal cystocele. This before delivery.

The conditions after delivery calling for special vigilance would be:—1. The patient not having passed water at least ten or twelve hours after labour. 2. Her inability of doing so. 3. The uterine tumour being too high in abdomen. 4. Pain over pubis not due to after-pains.

ARTICLE X.—*A Refutation of Malthusian Arguments.* By F. P. ATKINSON, M.D., late Surgeon St Bartholomew's Hospital, Chatham.

IT is a common saying, "When a man has a hobby he generally rides it to death," and this, I think, may be fairly said of the Malthusians, inasmuch as they make out that the greater part of the poverty, drunkenness, prostitution, and other evils which exist in our midst, together with our high death-rate, is caused by over-population; and they bring forward facts in proof of their argument which at first sight appear unusually strong, but which are found, upon close inspection, not to support the inference. In this last respect they are very much like the opponents of vaccination. It would be satisfactory if one could learn for certain whether it is the intention of the Malthusians to lessen poverty, etc., relatively or absolutely, inasmuch as our object is to give the greatest happiness to the greatest number, while they appear to consider numbers of no importance. The two countries which they hold up specially for our admiration are France and New Zealand. In the former country there is a birth-rate, they say, of 26 (against our 35), and a death-rate of 23 per 1000, and the lower classes are, as a rule, infinitely better off than our own. Considering, however, that they are not essentially a manufacturing and mining nation, are not so given to drunkenness, and not so pent up in towns, the death-rate ought in reality to be *much lower* than our own, and the fact of its not being so tells somewhat, I should say, against the views advocated. The lower classes in France are better off than our own because they are more provident; they eat less, they drink less, they dress less, and consequently, on the average, they save more. There can be no question that the low birth-rate, however the Malthusians may view it, is a cause of great dissatisfaction to the French nation, and the *Republique Française,* after showing that the rate of increase among the French people has been steadily on the decline for the last two hundred years, says that such a state of things is deplorable. It considers the rapid increase of the population to be not only an element of military strength, productive power, and intellectual superiority, but points out that one of the consequences of this waning population is dearth of labour. France on this account has to import, at considerable expense, labourers from Belgium and Italy for agricultural and industrial purposes.

In order to correct the evil, two devices, it would appear, have been adopted—one to try and increase the number of marriages, the other to take care of the illegitimate children before and after birth. The Conseil Général of the Rhône Department has lately issued a decree, to the effect that the support of all forsaken children shall be defrayed by the deduction of one-fourth from the salary or pension of every official or pensioner who is *unmarried* and resident in the Department of the Rhône, who belongs or has belonged to the army, magistrature, or any other branch of the public administration; and the Municipal Council of Marseilles, it would appear, have resolved to set apart an hospital ward in each of the departments for the reception (under seal of secrecy) of unmarried mothers from the period of the fifth month of pregnancy, so that they may be saved the pains and penalties of illegitimate maternity, and their offspring may be properly cared for. Many are in favour of re-establishing foundling institutions in order to try and lessen the immense mortality of children which results from the large amount of illegitimacy in France, and the distress of unmarried mothers.

Alcoholization, I am sorry to say (which, if the Malthusians are correct as to the cause, ought to be diminishing), is sadly on the increase in France, and in proof of this assertion I will quote extracts from two papers. The first is written by the Paris correspondent of the *Daily Telegraph*, and dated 20th November 1879. It says, "The increase in the number of these wine-shops is becoming alarming; and although a drunken man is rarely seen in the streets of Paris, the hospital doctors will tell you that alcoholization threatens to become a very grave element in the depopulation of France." The second is from *Le Journal d'Agriculture Pratique*. The writer, when discoursing upon the social condition of the labouring classes in Normandy, says they indulge so much in liquors of the cheap and nasty kind that, looking at the increasing death-rate and the crowding of the lunatic asylums, he cannot help holding very gloomy views as regards the future, and picturing to himself wasted lands and depopulated towns.

New Zealand is especially cried up because meat sells at from twopence to threepence per pound, and the death-rate is said to be only 12 per 1000. Now, the low death-rate, I think, may be fairly put down to climate, the absence of manufactures, and the rural condition of the people, quite as much as to the low price of meat. Again, inasmuch as meat sells at so low a price, it is clear that what is raised is in excess of home requirements, and the surplus is not made use of by foreign nations, which is bad for the producer. Corn, without doubt, is abundant, but the price of labour makes the loaf dearer than it is in England.

An article in the *Limited Liability Review* for October 1880, with regard to New Zealand, says, "Land, except in the interior, where there is neither railway nor water carriage, is very dear, taxes are very heavy, and imported goods expensive in consequence of heavy import duties. There appears to be little or no demand for agricultural produce, and altogether the position of the small farmer is deplorable. Until the Government can devise some means of reducing very considerably the rate of taxation without increasing the debt, a speedy stop will be put to immigration, for there are many other colonies ready to welcome immigrants possessing capital, and which hold out far better prospects of success." According to a recent report of the Colonial Treasurer to the House of Representatives, the public debt of New Zealand amounts to £27,422,611, the interest on which is £1,535,000 annually; while the expenditure for the year 1880 was estimated at £3,198,709. The whole population, it appears, does not much exceed 450,000, and of these a large proportion consists of children.

Why the Malthusians do not recommend Siberia as our model I cannot understand, considering that a large portion of the country (which is one million square miles larger than the whole of Europe, twice as big as Australia, and nearly a hundred times as large as England) is singularly rich and productive, and possesses abundance of game and extensive pastures for cattle. Mr Lansdell, in the *Contemporary Review* for October 1880, says that "a merchant in Yiumen sold 10,000 brace of grouse and capercailzies for the St Petersburg market at ninepence a brace all round, and that *meat* was to be bought in Tobolsk in 1877 *for less than a halfpenny per English pound.* In the Tundras region the rivers are so full of fish that the natives try to avoid taking a heavy haul, so frequently are the nets broken by the abundance of the draught."

It will now be as well, I think, to inquire as to the past and present condition of Great Britain, then to take into consideration some of the Malthusian assertions or statements, and afterwards to see what position we, as medical men, should assume with regard to the views which the Malthusians at present hold.

First, then, as regards the past and present condition of Great Britain. Five hundred years ago, when there was abundance of land and to spare, the least powerful, it appears, just as now, were unable to obtain sufficient of the produce of their own toil to keep them from hunger, for Green, in his *History of the English People*, tells us that at the time referred to the wages for which the law compelled people to work were so low that an able-bodied man could not buy sufficient for his own sustenance. Macaulay in one of his essays says, "Though there are many more people to share the wealth now existing than there were in the sixteenth century, it seems certain that a greater share falls to almost every individual. . . . . And it would appear, while our numbers have increased tenfold, our wealth has increased one hundredfold." Kolb, in his work on *The Condition of Nations*, says, "The well-being of the English people has risen higher than that of any other nation, and for the most part among the masses. It is well known how much better the artisan lives in England than on the Continent. It is especially seen in the increase of the average length of life, the correct estimate of which in individuals may be doubtful, but never when taken in the mass. According to Quetelet, in the year 1700 there was an annual mortality among the artisans in England of one in forty-three, and in 1840 of one only in fifty-one of the population. It is seen further in the great consumption of animal food. Even twenty years ago the average yearly consumption of meat for each individual of the population in England was 136 pounds, while in France at the same time it was 39⅖ pounds, in Prussia 35½ pounds, in Baden 50 pounds." Mulhall, in his work called *The Progress of the World*, after expatiating on the past and present condition of the English people, says, "The change is so great that we should find it intolerable to return to the *modus vivendi* of our forefathers." Since 1860 income-tax returns prove that the wealth of England has increased 75, that of Scotland 80, and that of Ireland 52 per cent. Of the increase in wages artisans have enjoyed a larger share than the educated classes; and while the advance in this direction is put down at 50 per cent., Mr Mulhall shows that few of the comforts of life are 10 per cent. dearer. "Our people," he says, "are better fed, can do more work, and possess a greater amount of national wealth, than any other nation. Our banks, shipping, railways, docks, and other elements of national industry have doubled during the last twenty-five years, and all the comforts of life are more within the reach of the million than before. Schools and libraries have multiplied, as also charitable institutions, and the statistics of crime for the United Kingdom in 1877 show a decline of 64 per cent. since 1840. The condition of women has notably improved, for instead of 6,000,000 adult English women depending on the men for support, 3,000,000 now earn their living, of whom 2,000,000 are independent, including 1,071,000 housemaids, 362,000 milliners, 232,000 laundresses, 85,000 teachers, and 86,000 who keep lodging-houses. Taxation is lighter; the National Debt has been reduced; our habitations are improved, the value of houses built in the last seventy years being estimated by *The Builder* at £1,220,000,000 sterling. The rate of mortality has been so lowered by sanitary improvements that the span of life is now six years longer than half a century ago."

"From whatever point of view," says the *Daily Chronicle* reviewer of Mr Mulhall's work, "they are surveyed, 'the good old times' (as some still persist in calling the beginning of the century) show to disadvantage when contrasted with the present. The middle classes now enjoy more comforts than noblemen could then command, and workmen have shared in the general prosperity. Taxes, every one will admit, are heavy,—much heavier than could be wished,—but they are lighter than they were seventy years ago. The figures for 1811 put the taxes per inhabitant at 83s.; whereas in 1879 the amount was only 49s. In 1817 the National Debt averaged £45 for each inhabitant—at present it is barely £23, and if the largely increased municipal and other local debts are added to it, the average will not exceed £27 per head. . . . As the schoolmaster has advanced, both crime and pauperism have diminished, the proportion being shown in the following table:—

	1850.	1877.	Rise or Fall per cent.
School children, to population, . .	12 p. cent.	17 p. cent.	Rise of 42
Convicts, per million inhabitants, . .	1150	488	Fall of 56
Paupers, per 1000, .	53	33	Fall of 39

Still the pressure of pauperism is excessive, and it must be viewed in connexion with the one great drawback to British prosperity—the increase of drunkenness. Between 1868 and 1877 the value of liquor consumed rose from 78s. to 96s. per inhabitant. This is nearly £5 per head, and Mr Mulhall says, 'It seems the working classes spend relatively ten times as much on liquor as the educated classes. Hitherto English workmen have been noted both for the quality and amount of work they accomplished, but now the British consul in New York says that "he believes Americans get more work out of the operatives, because they are more sober than the same class in England."' Let our countrymen study the suggestive figures which tell of the world's progress, and mark how much of the world's misery is wrought by the demon drink. Most of the crime, more than half of the insanity, and a vast deal of poverty, are directly ascribed to intemperance. It seems, indeed, from the teaching of this book, as if we have but to remove drunkenness in order to secure an amount of individual and national prosperity such as the world has never before known."

We have now to consider some of the more important arguments which the Malthusians are so fond of advancing, and they are these:—The chief part of the existing drunkenness is due to poverty, and the chief part of our poverty, together with our high death-rate (both adult and infantile) is the result of overpopulation. *First*, then, as regards our drunkenness: "Last year," says a leader in *The Daily Telegraph*, "the nation drank less than in 1878 by £14,045,036 worth; in other words, in 1879 it spent 9·8 per cent. less on liquor than in 1878. Some people assert that the people have of late been drinking less because they have been too poor to buy drink, and the allegation is, to say the least of it, plausible. But in times of bad trade the poorer class of drink-consumers are the very last to be reached by the influence of commercial depression. It would not, however, be difficult to show that, in spite of bad business, the masses have been able to import in increasing quantities not merely food necessaries, like grain, but food luxuries, like bacon, butter, eggs, and the like. Then it is extraordinary that, if the people were too poor to buy such luxuries as alcoholic drinks, they were not, during the period on which we are commenting, too poor to buy non-intoxicating beverages, such as tea, coffee, cocoa. Along with the decrease in the consumption of alcoholic drinks there has been going on since 1878 a most striking increase in the consumption of non-intoxicants; the use of coffee among the people has become commoner by 3·9 per cent. The consumption of tea has been augmented by 1·9, and that of cocoa by 1·3 per cent., and any attempts to explain away these facts have been singularly futile."

Second, With regard to the assertion that our high death-rate is due to overpopulation, it is not a little curious to note that the rate has decreased instead of increased with the increase of population. High it undoubtedly is, but it may be said without fear of contradiction to be really in great measure due to—

1st, Our nation being essentially a manufacturing and mining one.

2d, The wretched state of the dwellings of the poor as regards ventilation, drainage, and water supply.

3d, The drunkenness of the lower classes.

4th, The luxury of the upper classes.

With respect to luxury, Dr Guy says it, "like intemperance, tends to undermine health and shorten life. Hence the higher orders are short-lived, and, we therefore may safely infer, unhealthy while they live. Our agricultural labourers, in spite of their many disadvantages, live much longer; and the aristocracy are nearly on a par with the members of benefit societies in Liverpool, the unhealthiest city in England. Of the classes, too, which enjoy the most ample means of self-indulgence, those are most healthy who are least tempted. Thus the gentry are longer-lived than the aristocracy, the aristocracy than the members of royal houses, and these last than crowned heads. Those who occupy the highest place in the social scale are probably, in point of health and longevity, but little raised above the very meanest of their subjects." "Truly there is compensation in this world, if we but rightly understand it. The poor peasant of thirty years old, who eats his scanty mid-day meal under the shadow of a hedge, has a higher probability of thirty more years of life before him than the possessor of vast domains, robed in purple and fine linen, of an equal age."

Our high infantile death-rate is due to—

1. Drunkenness on the part of the mothers.
2. Improper feeding.
3. The lessening tendency of mothers to nurse their children.

Dr Ogle says, "In this country every year about 800,000 infants are born, and out of this number 120,000 die before they are a year old, *i.e.*, 15 out of every 100. The vast proportion of these children die because they are misfed, the diseases from which they suffer being caused by improper or insufficient food. The increase in the number of deaths is due to the enormous number dying from diarrhœa and wasting diseases, which result from improper feeding.

We now come to the Malthusian statement that the produce of the soil goes on increasing in arithmetical, and the population in geometrical progression. Mr Cliffe Leslie, in an article in Morley's *Fortnightly Review* of October 1880, says, "Is the potential rate of increase always and everywhere what Malthus supposed? Does it really remain constant, as he assumed? Mr Amasa Walker has adduced the following statistics of the proportion of births among American-born and immigrant inhabitants of the State of Massachusetts:—

Native population,	970,952
Foreign,	260,114
Number of births in native population,	16,672
Do. do. foreign do.,	16,108

The number of births in the native population, to be in proportion to the foreign, should have been 60,289, or nearly four times the actual number. Such a decline of births seems to indicate something more than the increased force of the prudential check, since Franklin said, 'Marriages in America are more general and more generally early than in Europe, and if in Europe they have but four to a marriage, we may here reckon eight.' Mr Walker himself suggests that one cause of the difference is that the 'foreign population is engaged somewhat less than the native in indoor and sedentary employments, and in so far are likely to be more vigorous.' He also furnishes statistics which prove that the mortality is considerably greater, and the longevity less, among the American-born than among the foreign inhabitants. When to this we add the vastly greater proportion of diseases of the digestive organs in the United States than in Great Britain, the premature fading of American women, and what dentists report of the frailty of American teeth, the conclusion seems inevitable that a decline in vigour and fecundity is one of the causes of the small families of American-born citizens, and that the potential rate of increase is not constant, as Malthus supposed. . . . . The slow growth of the native population of the Eastern States of America seems to lend probability to Mr Herbert Spencer's doctrine, that the increased cost in nervous structure and function attending the keener struggle for life as human society advances entails a diminution in fecundity; and whoever studies Mr Spencer's arguments along with facts which may be learned from English physicians, surgeons, and dentists, will find ground for surmising that new elements and conditions, which Malthus could not foresee, have begun to affect the population of Europe itself. A question, indeed, arises whether Mr Spencer's view of the matter is not of too optimist a colour, and whether the hurry and anxiety of modern life do not cause more than a mere change in the direction and use of nervous power, and bring with them a decline in physical vigour that takes many painful and distressing forms, and is, in truth, a degeneracy of the race. However this may be, there is much to justify a doubt that Lord Macaulay's prediction will ever be fulfilled, or that American-born citizens will ever be driven to give the theory of Malthus a prominent place in their treatises."

"What fears," says Kolb, "were produced by the Malthusian doctrines as to the increase of population according to geometrical progression! To what perverted proposals did they lead! How much did they tend to delay a sound and reasonable development of legislation upon marriage and settlements! Nay, how much they prejudiced the progress already made! If statistics had then been sufficiently perfected, not only would many have been protected from unnecessary fears, but many legislative and police regulations which have acted injuriously upon the well-being of the people would have been avoided. The outcry is, that food increases according to arithmetical progression, whilst mankind increases according to geometrical progression. This has tended to revive the system of 'paternal government;' official wisdom interfering with marriage settlements, trades and manufactures, division of property, instead of leaving to the people that freedom which develops personal responsibility. Police encroachments upon the most natural rights appeared to be authorized, and even necessary for the general good. In opposition to these experiments, look at the beneficial results verified by well-established statistics of widespread freedom in those lands wherein it prevails. . . . . Is it true that mankind increases according to geometrical progression?"

The population in three European States has increased according to the following percentage:—

Years.		France.	England.
1821 to 1830, . . .		6·89	15·89
1831 to 1840, . . .		5·07	14·27
1841 to 1850, . . .		4·49	13·0
1851 to 1860, . . .		2·59	11·18
1861 to 1870, . . .		...	13·23
1861 to 1866, . . .		1·82	12·0
1867 to 1872, . .	minus	1·01	13·0

Years.	Prussia.
1831 to 1839, . . .	14·49
1840 to 1846, . . .	7·93
1847 to 1852, . . .	5·10
1853 to 1855, . . .	1·57
1856 to 1858, . . .	3·12
1859 to 1862, . . .	4·26
1863 to 1865, . . .	4·13
1866 to 1868, . . .	2·32
1867 to 1872, . . .	1·81

We find nowhere in these tables the much-dreaded geometrical progression. Nowhere do we trace an unvarying arithmetical progression. Other data, indeed, justify the assertion that, as a rule, prosperity raises a people decidedly more than mere increase

of population; but if, under such prosperity, the increase of the population should be at a standstill, or even retrograde, this will be found to be owing to some instability in its prosperity, or deterioration of its condition—some deep convulsion affecting society at large. As a rule, the falling off or the increase of the people may be explained by the improvement or deterioration of their condition. If we improve the social condition so far as is possible, we shall soon perceive results which far exceed our expectations. *Statistics do not teach the doctrine of fatalism,* but, on the contrary, of human perfectibility. If you improve your land, you improve your plants and insure their increase. But this improvement acts upon the creatures which are nourished by them and lastly upon man, who is served and fed by all. Statistics tell us that the advances towards human perfectibility are shown by the scale of increase of the population, that is, by births preponderating over deaths, and by the increase of the average duration of the life of man. This is, after all, the best indication of the social well-being of a land and of its people. A decrease of population shows, not an improvement, but a deterioration, in the condition of a people. To avoid misunderstanding, we admit that the increment of the well-being, power, and importance of a nation must not be measured unconditionally by the number and increase of the population, although its decrease is an indication greatly to be regretted. Still, the extraordinary demand which sometimes obtains for food adequate to our population requires our thoughtful consideration. Beyond the conditions favourable for its acquisition, and increase, a people must possess certain rights and privileges, for thereupon rest human worth and dignity, and the consciousness of this dignity engenders all the noble aspirations of our nature. We are taught this also by statistics, whose task it is to investigate and estimate the cause and effect of every phase of social life. If we glance at the great kingdom in the east of Asia, we must admit that China, in spite of its 500,000,000 of inhabitants and the great industry and frugality of its people, is yet in a deplorable condition. Its women are slaves, its children are got rid of as if births were solely for the purpose of filling up the graves. This is caused by no lack of police organization or of legal oversight, for an average of every 10,000 families are under the care of no less than 3000 government officials.

The remarks of Valentine Smith, who observed something of the same state of things nearer home under Napoleon, are worthy of notice. He says, "Human freedom, freedom of land, in fact, freedom of every kind which constitutes the soul of progress, is what is wanting in China, and freedom in this extended sense is what is indispensable to the development of human well-being." The science of hygiene teaches, and statistics record the facts, that wherever a people are crushed under despotic power, there the health of the people is enfeebled, old age comes prematurely, and the average of life is shortened; life pines away, its very sap dries up, where the sense and exercise of freedom are denied.

Great Britain expends annually from £35,000,000 to£50,000,000 for bread-stuffs imported from foreign lands. Yet, strange to say, the wealth which the industries of the country produce is infinitely greater than if all the working power were expended on producing bread-stuffs alone. "The richest countries," says Mr Cliffe Leslie in the article quoted above, "are not those where nature is most prolific, but where labour is most efficient — not Mexico, but Massachusetts, not Brazil, but Great Britain. The cause, then, of the depression of both the wages of labour and the interest on capital, and the growth of poverty as society advances, is not the increase of population, and does not lie in the condition of production. It must therefore lie in distribution."

From the foregoing arguments I think it is perfectly clear what position we, as medical men, should assume. We should certainly not lend countenance to any schemes for hindering the natural birth-rate. We should rather try to lessen the death-rate by doing all we can to diminish drunkenness; to promote the spread of knowledge; to improve the dwellings of the poor as regards drainage, water supply, and ventilation, and to encourage emigration (especially of women). By these means the greatest amount of wealth, prosperity, and happiness will be assured, and that, moreover, to the greatest numbers.

Extracts from "The Echo," 1881.

Count Othenin D'Haussonville, who has lately been publishing a series of contributions with regard to the great cities of modern Europe, asserts that the *Budget* of Paris for 1881 gives the number of the poor of the category in receipt of aid at no less than 354,812. From this number, however, have to be *deducted* 28,000 *children* who are either orphans or forsaken by their parents, 15,000 *women* who receive help during the period of childbirth, and 38,000 *sick persons* who live in their own dwellings, and are only assisted on account of their enforced abstinence from work and wage earning; and there are therefore about 151,000 persons, out of a population of 2,000,000, who are supported solely and entirely by the public purse.

PARSON MALTHUS. — Mr James Bonar, lecturer on Political Economy under the London Society for Extending University Teaching, has thrown a bombshell into the camp of the Neo-Malthusians. He directly challenges their right to call themselves by the name of the author of the *Essay on Population*, and affirms that Malthus himself anticipated their teachings and condemned them as immoral. In a pamphlet just published by Mr Maclehose of Glasgow, Mr Bonar subjects Malthus's celebrated essay to a close examination. It appears that during the author's lifetime the *Essay on Population* passed through six editions, in the second of which it was completely amended, and in the successive later ones continually expanded. Malthus was led to write his essay through a discussion which he had with his father, who was a strong Jacobin, and had been a friend and executor of Rousseau. The two had been debating the merits of an essay on "Avarice and Profusion" in Godwin's *Enquirer*, in which Godwin had maintained that "a state of cultivated equality is that state which, in speculation and theory, appears most conducive to the extensive diffusion of felicity." Malthus saw an insurmountable objection to this theory in the law of population, and hence the publication of his essay. Condorcet had very shortly before, in advocating similar views to those of Godwin, hinted at artificial checks to the growth of population, an idea which Malthus denounced in the very first edition of this work. In an appendix to the fourth edition, however, he says, "I have never adverted to the check suggested by Condorcet without the most marked disapprobation. Indeed, I should always particularly reprobate any artificial and unnatural modes of checking population, both on account of their immorality and their tendency to remove a necessary stimulus to industry." The Neo-Malthusians have boldly proposed to inflict a fine upon a man who has more than a certain number of children; but Malthus himself, in one of the later editions of his work, actually proposed that the State should defray a portion of their maintenance. He suggested that an allowance should be provided by law for every child above the sixth, to relieve the parent "from a species of distress which it would be unreasonable in us to expect that he should calculate upon; and, with this view, the relief should be merely to place him exactly in the same situation as if he had six children." Whether the Malthusian League be right or wrong in their practical teachings, it is evident from these quotations that, had Malthus been living now, he would have protested against his name being associated with theirs. In the interval between the publication of the first edition of his essay in 1798 and the publication of the second edition in 1803 Malthus had been travelling on the Continent and diligently pursuing his inquiries. His work was in great part re-written, and even its title was altered. Originally it stood thus, *An Essay on the Principle of Population, as it Affects the Future Improvement of Society;* in 1803 it was altered to *An Essay on the Principle of Population, or a View of its Past and Present Effect on Human Happiness.* The book was still more modified than its title. Malthus had come to the conclusion that the power of civilisation on the whole is greater than the power of population; that in modern times there is less disorder, more knowledge, and more self-restraint. Among savages vice and misery are the chief preventive checks on population, but in civilized society moral restraint must also be added, and this last he defines as "abstinence from marriage followed by no irregularities."

INTERNATIONAL MEDICAL CONGRESS.

THE great meeting, so long anticipated, and prepared for with such labour and care, has come and gone. The lay press and our weekly contemporaries have given most full, able, and exhaustive reports of its proceedings, so that every one who could not be present must have felt as if he had been there. Suffice it for us in a word or two to try to convey to our readers an impression of its spirit, its method, and its results. It has proved to be by far the largest and most important gathering of the profession ever held in the world. Upwards of 3200 men, many of them the foremost names in their various countries, met in London for a whole week of very hard, very carefully arranged, and most productive work. Our London hosts had, with most commendable energy and foresight, been working for two years to prepare for it, and the result was that the arrangement of the various papers and discussions in the sections was most admirable. It would be as impossible as it is unnecessary to detail all lines in which the work of the various sections lay. In the surgery one, which chiefly interested us, some most important topics were discussed, and the readers of papers and speeches were in the great majority of instances the men who, each in his own language, had the greatest right to speak *ex cathedrâ*. Take for example the day on the healing of wounds. Verneuil, Volkmann, Lund, Esmarch, Savory, and Lister were all brought face to face, with the best effect on the hearer. For no one could leave the room without feeling that by different ways, on various principles, guided by quite varied theories, results of extraordinary excellence could be obtained, and that year after year progress was being made in the direction of simplification of dressings, relief of pain, and prolongation of life. The doom of the spray was written in no doubtful characters; and though to some of us it almost seemed impossible that we could venture on opening a psoas abscess without it, yet the unparalleled and almost incredible results obtained by Esmarch of Kiel in great amputations and excisions must have immense weight.

Another day Bigelow and Thomson, each from his own standpoint, described the method of dealing with stones large and small. Another forenoon saw the vexed question of how and when to excise joints discussed with great vigour and force by Ollier and Kocher, Croft, Heath, and Bryant.

Absolute agreement was not to be expected; but, as a rule, calmness, courtesy, and mutual respect were the order of the day. Time would fail to tell of the brilliant reunions at the Guildhall and the College of Surgeons, of the garden parties, banquets, and conversaziones, of a private hospitality which was as discriminating as it was cordial, as splendid as it was inexhaustible. Few who were privileged to be present will ever forget the banquet given us at the Star and Garter at Richmond by the United Hospitals Club—a club owing its origin to the old friendship between Guy's and St Thomas, and composed exclusively of past and present pupils of those grand old Borough Hospitals—the perfect evening, the view from the terrace, the dinner, the speeches, the jokes, and the home-going—where all the hosts and nearly all the guests were men of European reputation, and the eloquence was in French, German, Italian, American, Irish, *very Irish*, and English.

"Two breakfasts I can manage," said a distinguished American editor and wit, "three luncheons in one day I can get through, but *two dinners in one day I cannot eat.*" Could we have dined six times a day, still we would have had willing hosts; and it is the best proof of the marvellous tenacity of life, the result of perfect digestive powers, which all medical men have, that we were not all killed with kindness.

Part Second.

REVIEWS.

Imperfect Hearing and the Hygiene of the Ear; including Nervous Symptoms, Tinnitus Aurium, Aural Vertigo, Diseases of the Naso-Pharyngeal Membrane, Middle Ear, and Mastoid Region: with Home Instruction of the Deaf. By LAURENCE TURNBULL, M.D., Ph.G., Aural Surgeon to the Jefferson Medical College Hospital, Physician to the Department of Diseases of the Eye and Ear, Howard Hospital, Philadelphia, etc., etc. Third Edition. With Illustrations. Philadelphia: J. B. Lippincott & Co.: 1881. Pp. 147.

THE two former editions of this work appeared under the title *Tinnitus Aurium;* and as the second edition was much larger and treated more fully of its subject than the first, so does the third copiously extend itself into an instructive work on almost the whole subject of aural surgery. No doubt the book is intended for more readers than belong to the medical profession; but many will enjoy the fruits of the author's visit to Europe, during which he was favoured with unusual facilities in bringing his studies on the subject up to the latest knowledge. The immediate teachings of this visit are detailed in the first 20 to 30 closely printed pages—Introduction, Progress of Otology. Whilst sojourning in Europe Dr Turnbull acted as President to the Subsection of Otology of the British Medical Association at its meeting in Cork; then later, in August 1879, as a member of the Otological Section at Amsterdam, in which capacity he availed himself of every opportunity of collecting and comparing views with the most distinguished men of Europe as regards diagnosis, prognosis, and success in the treatment of these most obscure affections of the ear. He also, on his return, compared those views, we are told, with those of the able men of his own country, while acting as Chairman of the Section of Ophthalmology, Otology, and Laryngology at the meeting of the American Medical Association which was held in New York City, June 1880.

The subjects are treated of under the following eight chapters:—The Limit of Perception of Musical Tones by the Human Ear; Tinnitus Aurium, and Observations on Aural or Auditory Vertigo, with Diagnosis and Treatment; The Importance of Treatment of the Naso-Pharyngeal Space, Tonsils, and Uvula, in Acute Chronic Catarrh of the Middle Ear; Artificial Perforation of the Membrana Tympani; The Mastoid Region and its Diseases, with Illustrative Cases; The Hygiene of the Apparatus of Hearing, with the Prevention of Deafness; On the Method of Educating the Deaf-Mute at Home, and on the Selection of Proper Schools for the Deaf and Dumb; A Comparison between the Audiphone, Dentaphone, etc., and the various forms of Ear-Trumpets. In all of the chapters, some of them very short, the author shows himself an experimenter and enthusiastic worker at his specialty, and we gratefully acknowledge having received much valuable instruction from a careful perusal of the book. To any one using hydrobromic acid in the treatment of tinnitus aurium we would now strongly recommend the use of that medicine as made according to the formula given on page 29.

Archives of Laryngology (for January and April 1881). Edited by Louis Elsberg, M.D. New York.

It is now our duty and pleasure to notice Parts 1 and 2 of the second volume of the above quarterly.

The first paper in Number 1 contains a Note of Five Cases of Tuberculosis affecting the Mouth and Throat, by Mr Lennox Browne and Dr Dundas Grant, who are strongly of the belief that tubercular ulceration has, in the above situations, a specific appearance, contrary to the opinion of Ziemssen, Vivian Poore, Cohen, Mackenzie, etc. They also conclude that cure in such is out of the question, as the disease is no sooner healed in one part than it is followed by an outbreak in close proximity. This paper is accompanied by two beautiful coloured plates.

Mr MacNeill Whistler contributes Part ii. of Notes on Syphilitic Stricture of the Larynx, in which he expresses his opinion that symptoms of stricture of this part pass away under proper specific treatment when the disease is in its earlier phase, but that in the more chronic and therefore fibroid state operative measures are required, especially tracheotomy, with, at the same time, endeavours to dilate the stricture, and this in preference to the treatment of some who simply try to dilate it by the passage of instruments by the mouth.

Professor Oertel, discussing the Treatment of Pharyngeal Diphtheria, considers the disease due to a local fungus, micrococcus diphtheriæ, which after a time causes general infection of the blood, and recommends the use of carbolic acid spray of five per cent. strength, applied every two or three hours, omitting it only when the urine becomes olive-coloured, for twenty-four hours, and during the intermission using other sprays, as boracic acid. To hasten the separation of the false membrane he employs steam, alternating it with the carbolic spray, and also jaborandi or pilocarpine internally, which, he states, increases the secretion of mucus beneath the membrane, and loosens and lifts it up. His success with this plan of treatment is apparently great.

The other papers are, a case of Retro-pharyngeal Abscess in the Adult, by Dr Harrison Allen; and a continuation of the Minute Anatomy of the Larynx, Normal and Pathological, by Carl Seiler, M.D.

In the April number Dr Cohen contributes a case of Primary Tuberculosis in the Larynx, though we think the proof of its seat being primary here is not so conclusive as might be.

Dr Bosworth, in writing upon Nasal Stenosis and Hypertrophic Nasal Catarrh, recommends the use of glacial acetic acid or the galvano-cautery for destroying the hypertrophied nasal mucous membrane, and properly condemns the forcible evulsion of the membrane by means of forceps.

Following this paper, Dr Seiler describes a case of Papillary Growth of the Larynx, which occurred in the person of a gentleman. The tumour grew rapidly both towards the surface of the neck and into the laryngeal cavity, and necessitated several operations, tracheotomy, thyrotomy, and dividing the cricoid cartilage and first ring of the trachea, in order to get at the growth, which was removed, but, rapidly recurring, killed the patient.

Dr Roe relates a case of Fracture of the Larynx; Dr Fletcher one of Swallowing the Tongue; while Dr Langmaid writes upon the Treatment of Certain Forms of Vocal Disability by the Application of Voice Culture; and papers by Drs Daly and Jervis on Nasal Polypus and Hypertrophic Nasal Catarrh complete the list. At the end of each number there is a quarterly report and abstract of laryngological literature by Dr Lefferts.

Upon the whole, we may congratulate the editor and the authors on their evident enthusiasm in their work, as also the results.

Part Third.

MEETINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING XI.

Wednesday, *25th May* 1881.—Dr ANGUS MACDONALD, *President*, *in the Chair*.

I. *Dr W. A. Finlay* showed a preparation of BOWEL from the case of a child with imperforate anus. After cutting over the site of the anus to a depth of 1¼ inches he failed to reach the bowel, and therefore desisted. At the post-mortem examination the last half inch of bowel was found to be an obliterated cord, the tip of which was distant two inches from the skin of the perinæum.

II. *Dr James Carmichael's* NOTE ON A CASE OF RETRO-PHARYNGEAL ABSCESS IN A CHILD, which appeared at p. 24 of this Journal, was then read.

Dr Ogilvie Will, Aberdeen, had seen one case in a child ten months old, when he punctured the swelling, and the child recovered. He did not think Dr Carmichael's most unusual case should deter them from opening such abscesses. In some cases Hilton's plan of opening them from the outside of the neck would be found valuable.

Dr Finlay said that when hæmorrhage occurred into an abscess cavity, it was generally due to the pressure of the abscess causing absorption of the coats of the artery. Early opening of the abscess tended to prevent its occurrence. A tiny trocar might be used to ascertain that hæmorrhage had not already taken place. In Dr Carmichael's case the hæmorrhage appeared to be due to the walls of the artery participating in the general sloughy condition of the tissues.

Dr Wilson had seen one case, which simulated croup and opened spontaneously.

Drs Playfair, Hart, Chapman, Gordon, and Craig also made remarks.

III. *Dr Angus Macdonald* then read his paper on a CASE OF STONE IN THE FEMALE BLADDER.

Dr Wilson said all must feel indebted to Dr Macdonald for his valuable paper and remarks on the value of the various modes of operating. Such cases were very rare. All were agreed as to the caution to be used in dilating the urethra.

Dr Ogilvie Will had listened with great pleasure to Dr Macdonald's interesting and valuable paper. It could be easily understood why stone in the bladder was much less common in females than males. In Aberdeen, stone cases were not so rare as in Edinburgh. He thought Dr Macdonald had followed the best plan of treatment in this case, although lithotrity had a higher position in his mind than in Dr Macdonald's. Now that Bigelow's operation had been so successful in the male, there could be no doubt that a stone of almost any size could be crushed in the female bladder, unless where there was a troublesome nucleus, as in Dr Macdonald's case. While Dr Macdonald had followed the best plan in his case, he hoped gynecologists would not fall behind surgeons in their appreciation of crushing.

Dr Macdonald thanked the Fellows for their reception of his paper, and Dr Will especially for his matured experience on these matters. Aberdeen had more than its share of stone cases, so that formerly Keith and Pirrie, and now, he was glad to think, some of the younger surgeons, had an enviable experience in the treatment of such cases. He did not by any means undervalue lithotrity, but he confessed he had no personal experience of it, whilst he had sufficient knowledge of vesico-vaginal fistula to prevent him, in a case like the present, from having the slightest hesitation in opening into the bladder through the vaginal wall. Besides this, he was rather afraid the stone would have a troublesome nucleus. The exceedingly irritated and inflammatory condition of the mucous membrane of the bladder likewise demands the persistence of a vesico-vaginal fistula for a time, to give the organ rest. The beneficial effects of this operation were soon apparent. He would have liked some expressions of opinion on dilatation of the urethra. He was very much astonished that so many of his friends to whom he showed the stone should have thought that such a large one could be extracted by the urethra, notwithstanding the researches of Simon and Ogston. One of the main objects of his paper was to insist on the limits of the safe dilatability of the female urethra.

SESSION XL.—MEETING XII.

Wednesday, 15th June 1881.—Dr Angus Macdonald, *President, in the Chair.*

I. *Dr James Carmichael* showed the preparation of a RETRO-PHARYNGEAL ABSCESS CAVITY, with the carotid opening into it, on which he had read a communication at their last meeting.

II. *Dr Wm. Craig* then read his paper ON A CASE OF OCCLUSION OF THE SMALL INTESTINE IN A NEW-BORN CHILD, which appeared at page 146 of this Journal.

Dr T. R. Ronaldson thought Dr Craig was too absolute in saying nothing could have been done in this case, especially considering Billroth's cases of excision of the pylorus. He wished to know if it would be advisable in such a case to open into the abdominal cavity for diagnosis, if treatment were found impossible.

Dr Hart had something of the same feeling as Dr Ronaldson.

At the same time he did not think anything could have been done in this special case.

Dr H. M. Church related a case where a child died from stoppage of the bowels, and where on post-mortem examination numerous intussusceptions were found; of course these might have occurred just before death.

The President felt indebted to Dr Craig for his interesting case. Dr Craig indeed had quite the luck of getting hold of such. The explanation Dr Craig had advanced seemed tenable. As to opening the abdomen in cases of obstruction, his opinion at present was negative. He remembered two cases. In one seen in consultation, the lady was *in articulo mortis*, and on section they found evidence that previous inflammation, by forming a band of organized tissue connecting two adjoining folds of bowel, had caused such a constriction that fluid pumped up or down produced obstruction. He thought that if in this case an exploratory incision had been made, this band could have been snipped and the lady's life saved. Two months afterwards he saw a young gentleman, æt. 35, with obstruction; and, full of his previous case, he got Mr Chiene to see the patient in good time. Mr Chiene saw him thrice that day, and then, like the shrewd surgeon he is, refused to operate. On post-mortem they found that Mr Chiene was right, as there were very extensive chronic inflammatory adhesions that could not have been divided. This operation required extreme judgment and care in deciding whether it were advisable in each individual case, and should never be recommended as a matter of routine practice.

Dr Craig thanked the Fellows for their reception of his paper. Despite the criticisms of Drs Ronaldson and Hart, he was still of opinion that nothing could have been done in this case. The difference of calibre in the intestine above and below the obstruction would have effectually prevented their union by suture. Then no case had been as yet recorded of abdominal section in a new-born child. As to intestinal obstruction in adults, he had seen three cases in six weeks. One died after abdominal section; in another the obstruction, occurring during pregnancy, was fatal; and the third, sent to Hospital in time, died also, the surgeons declining to operate. On post-mortem the case was found to have been a hopeless one.

III. *Dr Napier* then read his paper ON CLINICAL OBSERVATION ON PUERPERAL TEMPERATURES, WITH CHARTS, which will appear in a future number of this Journal.

The President considered Dr Napier's paper an able and original one, and had listened to it with extreme satisfaction. He thought Dr Napier had advanced the subject of puerperal temperatures a stage. We still wanted a standard temperature for the lying-in period; and at present he himself was attempting to elaborate such a standard, and meant to publish a chart soon along with his quarterly Maternity report. He thought that temporary jumps in temperature were more common than Dr Napier allowed. It was rare indeed to have a patient in their Maternity without the temperature being at some time or other 102°. He was struck with one fact, viz., that it was quite usual to have subnormal temperatures, as Dr Napier had said. His own observations had fully borne out that fact. He agreed with Dr Napier as to the difference between temperatures in septicæmia (lymphatic septicæmia) and pyæmia (venous septicæmia). It was beyond his understanding, however, how Dr Napier diagnosed mastitis 10 days before it occurred. He was exceedingly pleased with Dr Napier's original research and the evident personal energy and scientific spirit with which he had carried it out. Every one who had attempted this kind of work outside a hospital knew the enormous difficulties and the toil involved in its execution. When to this is added the fact that Dr Napier's cases were dispersed through a widely scattered country practice, our appreciation of the amount of hard work needed to complete such a paper is very greatly heightened.

Dr Napier expressed his thanks to the Fellows for their reception of his paper. He had undertaken this research as he was unable to get any information on the subject from books.

SESSION XL.—MEETING XIII.

Wednesday, 29th June 1881.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Hart* showed for *Dr Simpson* a beautiful specimen of HYDATID DEGENERATION OF THE CHORION. The patient from whom it had been obtained was admitted into the Buchanan Ward on account of the occurrence of hæmorrhage and watery discharge. The uterus was enlarged to about the size of a six months' pregnancy, was irregular in outline and doughy. There was a loud bruit, but no fœtal heart. The diagnosis was easy although no characteristic vesicles were found in the discharge.

II. *Dr Macdonald* showed an INVERTED UTERUS he had removed by amputation. It was interesting to note that no peritonitis was present on the uterine peritoneal surface.

III. *Dr Macdonald* then read his QUARTERLY REPORT OF THE MATERNITY HOSPITAL, which appeared at page 111 of this Journal.

Dr J. Carmichael congratulated the President on his admirably drawn up report, and on the result of his quarter's incumbency. He thought these successful results might be ascribed reasonably to the precautions as to after management, especially to the modified antiseptic treatment adopted. He thought, indeed, this system might be further developed. As to uterine and vaginal injections, he was strongly opposed to their routine use in private practice in natural cases. He should employ them in operative cases, or where there was marked fœtor. He hoped good results would continue in future reports.

Dr Bruce pointed out that the mortality statistics in dispensary practice were fallacious. He remembered being called to see a female, delivered by a dispensary student, who left off visiting her without any reason except that he could not attend any longer. This was a decided case of puerperal fever, which terminated fatally. It would have been interesting to know what report the student gave concerning the case.

Dr J. Milne Chapman mentioned that in the Prague Lying-in Hospital antiseptic precautions were carefully used, and the maternal mortality was only 13 per 1000.

The President then read his paper on TWO CASES OF CHRONIC INVERSION OF THE UTERUS, which appears at page 193 of this Journal.

Dr Hart thought Dr Macdonald deserved the hearty thanks of the Fellows for his very valuable cases. He regretted exceedingly that Professor Simpson was unavoidably detained, as his experience would have been instructive. He himself had seen two cases in Dr Simpson's practice. In one the patient refused interference. In the second, at present under observation, all means had been tried fruitlessly. Gradual reposition had failed, forcible reposition had failed, and finally, an attempt to replace it by bimanual manipulation after abdominal section according to Thomas' plan had also proved unavailable. The complication in Dr Macdonald's second case was a very awkward one, and he thought Dr Macdonald deserved special praise for the way in which he met it, and without any special preparation or selected instruments performed the unexpected amputation of the uterus with a perfectly successful result.

Dr Macdonald thanked the Fellows for their reception of his paper. It was necessary to bring such cases up, as practitioners were apt to err in diagnosis. He remembered the first case of the kind he saw with Dr Matthews Duncan, and where he could hardly believe it was not a polypus he had to deal with. The fundus protruded through the cervix, and there was no stricture and no resistance. The fundus could easily be crowded into the cervix, but the difficulty was to reinvert it. No one, unless he had tried it, could have any idea of the difficulty and apparently hopeless nature of the task. One good point was the tolerance of the fundus to manipulation. In none of his cases had there occurred any metritic reaction. He was sorry that in his second case he had persisted so long in attempting reposition. After the ordinary efforts at replacement are honestly and fairly tried, it is a mistake to use force too long and too persistently.

Part Fourth.

PERISCOPE.

On the Incision in the Operation for Strangulated Hernia.—Mr Paul Swain, in a paper on this operation, objects to the usual practice. After the first incision through the skin, a bit of tissue is pinched up with the forceps and nicked with the scalpel, so that a director can be introduced under the tissue, which is then divided by the scalpel. But unless the scalpel be very sharp the tissues recede before it, and it is very difficult to keep the deeper incisions as large as the superficial one. The scalpel is also very apt to slip off the director. Mr Swain uses, in place of the scalpel and director, the blunt curved scissors used for extirpation of the eyeball, and finds that the operation can thus be performed with greater rapidity, neatness, and safety.—*British Medical Journal.*

Nerve-stretching for Locomotor Ataxy. — Dr Charlton Bastian has recently delivered a clinical lecture at University College on a marked case of locomotor ataxy, the symptoms of which he described very minutely. The patient was about forty years old. There was wasting of the muscles of the extremities, especially in the left leg and thigh. At length the movements of his legs became slow and jerky. After walking a few yards he would become exhausted and his legs would double up under him. Mr Marshall cut down on the great sciatic nerve on the middle third of the right thigh, and stretched it with his finger, pulling it twice upwards from below, thence twice downwards from above. Antiseptic precautions were employed. About five weeks later, the right lower limb having markedly improved, whilst the left remained as it was before the right sciatic nerve had been stretched, Mr Marshall operated on the left sciatic in the same manner. Troublesome diarrhœa followed, but seven weeks later, when the patient tried to walk, his gait was found to be much better, and tactile sensibility, previously impaired in the lower extremities, had become perfect. The first operation was followed in seven days by the disappearance of a constant aching pain in the hypogastrium, which did not return, though slight pain was felt in the lower part of the chest. In a less advanced case treated in the same manner the improvement was but slight. The wounds in these cases were slow to heal. Dr Bastian does not attempt to explain the mode in which nerve-stretching acts, but if it is found to do good it should be practised. The manner by which many drugs act specifically on many morbid processes is quite unknown, yet that is no reason for not continuing their use when they are known to be beneficial in disease, and the same principle now applies to nerve-stretching.—*British Medical Journal.*

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

On the Partial and Complete Removal of the Carcinomatous Uterus, by Karl Schröder (*Zeitschrift f. Geb. u. Gynäk.*, Bd. vi. Hft. 2).—The author enumerates the various operative measures for the above, as follows:—1st, Removal through abdominal incision; 2d, Removal through the vagina.

I. He describes (*a*) an operation for the amputation of the body of the uterus at the level of the inner os by laparotomy, where the stump of the uterus is to be sewn together after removal of a triangular-shaped portion out of its centre, and after that the peritoneum is to be sewn by fine sutures over this. He tabulates five such operations performed by himself, with four recoveries and one death from septicæmia. The further progress of two of the cases is mentioned. One of them had apparently a return of the disease five months after operation; the other had none after four months. (*b*) Freund's operation he characterizes as very difficult, but technically capable of perfect accomplishment. He tabulates eight cases performed in the University wards (Berlin), six by himself, one by Veit, and one by Freund—deaths five, recoveries three, one with return of disease after two years, one which died of recurrence after eighteen months, and one which was healthy at the end of two years and two months.

II. *By the Vagina.*—(*a*) Amputation of the vaginal portion by ecraseur, galvano-caustic wire, knife, or needle, and the author refers to his paper on this subject in the *Charité-Annalen*, Jahrgan. v. S. 343. (*b*) The supravaginal excision of the whole cervix, where the stump is secured by stitching the anterior lip to the anterior vaginal wound, and the posterior to the posterior, while the vaginal wounds laterally are brought in apposition, and also secured to the sides of the uterus. The bleeding vessels are secured in the ordinary way with forceps and ligature, the uterus being kept hauled down to the vaginal outlet. A table is given of thirty-five such operations by himself, and two by an assistant. Of the thirty-seven, four died, and three he attributes to imperfect antiseptic precautions. The number of cases where return of disease is noted is considerable; but this he attributes to his having frequently operated merely to afford temporary relief. On the other hand, one of his cases he reports as enjoying "blooming health" eight months after operation, and several others as being free from disease at periods of from two to eighteen months afterwards. (*c*) Total extirpation of the uterus through the vagina. Here the uterus is pulled down and the bladder fully separated from the cervix. An incision is then made into the pouch of Douglas, extending to the recto-uterine ligaments. Two fingers are passed through this wound and over the fundus uteri, and using them as guides, the anterior attachments are separated by the knife, and the fundus then pulled back, and projected through the opening in Douglas's pouch. To aid this it may be necessary to grasp the fundus through the opening with a volsellum. The ligamenta lata are then secured by one or more ligatures close to the uterus. The author leaves it an undecided question whether the ovaries should be removed or not, but says that if it be desirable to remove them, this will be better accomplished after the uterus has been removed as above described. The bleeding is stated to be easily arrested if the uterus alone has been removed; but in cases where much of the surroundings have to be included in the removed mass it is difficult, and has to be accomplished by deeply passed needles carrying ligatures from side to side. A stout drainage-tube with a cross piece attached is passed through the centre of the wound, and the lateral portions are approximated without any special care being taken as to careful apposition of the peritoneal wounds. The vagina is then loosely packed with salicylic wool, and the free end of the drainage-tube wrapped round with the same material. Washing out through the tube is only resorted to if indicated by high temperature or stinking discharge. The tube and the stitches are removed at the end of two or three weeks. By this method Schröder has operated eight times, all during the past year (1880), and only one has died, this latter from bleeding resulting from a tear in the right broad ligament produced by tightening the ligatures. No return of disease in any of the cases has yet been noticed. The writer then enters into a consideration of the classes of cases to which these various operations are applicable, and contrasts his operation with that of Freund, which he regards, even as modified by Bardenheuer's drainage, as much more fatal than the method just described. Freund's operation is described as being followed by great and often fatal shock, while the condition of a woman after the author's operation is said to be no worse than that of a woman after delivery. Freund's operation the author would reserve for cases where either the uterus is too large or the vagina too small to permit of removal from below. In conclusion, stress is laid on the necessity of full and careful examination under chloroform of all cases prior to determining on operation, and on selection for operation of only such cases as present no infiltration into the broad ligaments or cellular tissue of the pelvis, and where the uterus is freely movable.

ON TOTAL EXTIRPATION OF THE UTERUS, by J. Mikulicz, First Assistant in Prof. Billroth's Clinique, Vienna (*Centb. f. Gynäk.*, No. 14, from *Wiener Med. Wochensch.*, No. 47, etc.)—After a complete review of the subject, the author details several of Billroth's cases. In regard to Freund's operation he quotes Ahlfeld's collection of sixty-six cases, where forty-nine died as a result of the operation, and where at the end of a short time only seven were left alive, and these the most recently operated on cases. Two cases of Billroth's both died, in 28 hours and 2½ days respectively. Of seven cases where Billroth operated by the vagina, three died and the rest all had a return of disease within three months. The writer's conclusions in regard to the relative value and danger of the two operations agree with those of Schröder mentioned above. Mention is made of a pair of forceps intended to compress the tissues before ligaturing, and to prepare a groove for the ligature, and their use is recommended. [*Kleinwächter* of Innsbruck, quoted in No. 14 of the *Centralblatt für Gynäkologie*, tabulates ninety-four cases of Freund's operation up to the end of 1880, of which twenty-four were successful, *i.e.*, did not die.]

TOTAL EXTIRPATION OF THE UTERUS, by M. B. Freund (*Zeitschrift für Geb. u. Gynäk.*, Bd. vi. Hft. 2).—The writer defends at length the operation which bears his brother's name, and attributes the fearfully fatal statistics of Ahlfeld mentioned above to clumsy and inexperienced operators and imperfectly selected cases. He criticises the operation, and suggests some modifications founded upon the results of seventeen experimental operations performed post-mortem, the details and dissections of which he appends.

CASE OF RETRO-UTERINE HÆMATOCELE, by Julius Rosenstirn of San Francisco (*Centralblatt für Gynäkologie*, No. 13, 1881).—The interest of this case centres in its etiology, which the writer says is unique in the literature of the subject. The patient, an American lady, having had two children, and being again pregnant about two months, thought it desirable that the course of this pregnancy should be interfered with. She accordingly, after large doses of ergot had failed to bring about the desired result, resorted to a bathing establishment where electric baths, according to the writer, are much used by American ladies for the purpose of producing abortion. One pole of a constant current battery was placed over the sacrum, the other passed into the vagina. This was repeated for a few days, and produced pains and a slight bleeding, and suddenly the hæmatocele was produced and abortion took place. The hæmatocele increased to an enormous size, owing to imprudence on the part of the patient. It was treated at first in the ordinary way, and subsequently and very successfully by massage, which the writer recommends very strongly. "For the production of abortion," the author says, "among us, unfortunately, a matter of daily occurrence, there has lately been largely used—and, one hears, with very good results—the electric baths which are to be obtained in a Russian bathing establishment. According to the wish of the bather, the electrodes are placed over the sacrum and either on the mons veneris or against the neck of the uterus, and a stream of sixty very powerful Daniell's cells used."

ASPHYXIA OF THE NEWLY-BORN CHILD, by Dr Goyard (*Archives des Tocologie*, etc., May 1881).—The writer relates a case where, after for 1½ hours unsuccessfully employing all the ordinary methods to start respiration in a still-born child, he had recourse to the method of Dr Gustave Le Bon, with the result of starting respiration after thirty seconds. The method consists in immersing and keeping the child in a bath of water of a temperature of about 100°. The method is recommended as being applicable by the most uneducated midwife or attendant.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By **William Craig**, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Nitro-Glycerine in Angina Pectoris. — Professor M'Call Anderson of Glasgow University recommends nitro-glycerine in angina pectoris. "The preparation used was a 1 per cent. solution in spirit. My experience, so far, of the comparative merits of nitrite of amyl and nitro-glycerine is, that while the latter acts more slowly, several minutes elapsing before its influence is fully felt, it seems to be more permanently beneficial. Mr M. came to me in February 1880, on account of pain in the epigastric region. I had no doubt that the pain referred to was of the nature of angina pectoris, and determined to try the effect of the internal administration of nitro-glycerine. The initial dose was 1 drop of the 1 per cent. solution three times a day, which was gradually increased until he took as much as 15 drops six times a day, and with no inconvenience except that for half an hour after each dose he complained of some fulness in the head and of headache. It was soon found, however, that his symptoms were sufficiently controlled by 10 drops three times a day. Before the treatment was commenced he could never walk more than three hundred yards without pain; but when he left the hospital he could walk at least half a mile at an easy pace on the level without discomfort, and when the pain began to make its appearance he could put a stop to it at once, and continue walking, by swallowing a dose of 10 drops. A month later he told me that he had found that 3 drops was then a sufficiently large dose of the nitro-glycerine to keep the angina symptoms in abeyance."—*Glasgow Medical Journal*, July 1881.

Benzoate of Calcium.—This salt is in feathery crystals, of a silky lustre, odourless, with but slight rather alkaline taste, and is soluble in about twenty-four parts of water. It may be dispensed either in capsules or solution. The usual dose is eight grains. At a meeting of the Philadelphia County Medical Society, Dr A. H. Smith and Dr O'Hara spoke of the great benefit this preparation had been in cases of albuminuria during pregnancy.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

I. CONCERNING THE INNERVATION OF THE MUCOUS GLANDS OF THE LARYNX AND TRACHEA.

The following are the results of our experiments on the throat of living cats and rabbits, on this, until now, strange to say, not yet inquired into subject:—

(1.) The secretion of the mucus is a continuous secretion. If we observe the larynx and trachea for a considerable time, it may be with the laryngoscope, or by direct exposure of the laryngeal and tracheal mucous membrane, we find the latter always covered with a thin, clear as water, but tolerably consistent mucous layer. As often as we try to dry the mucous membrane by firm pressure with good blotting-paper, again and again we constantly see, immediately after this procedure, the mucus in the tiniest drops springing out of every mucous gland, so that one to two minutes afterwards, by constantly increasing and flowing together, the whole mucous membrane is anew covered over with a coherent mucous layer. Also if, immediately after drying, we cover the mucous membrane with a fine clear layer of oil, the mucous secretion comes on again in quite the same manner as in the case where the dried membrane was left alone.

(2.) The secretory nerves of the laryngeal and tracheal mucous glands are as yet unknown; but, in any case, they can only come to the glands in three ways—either with the superior laryngeal nerve, or with the inferior laryngeal nerve, or from the fine twigs which from the bronchial branches of the vagus run upwards to the trachea. Further, the stimulating nerve-fibres of these nerves in the upper air-passages can only be derived from either the sympathetic in the neck, or from the branches for the neck and breast of the vagus. In order, therefore, to come to a conclusion, all these nerves were divided close to the sympathetic in the neck, then the vagus at different points, as well as the superior and inferior laryngeal, and their peripheral ends irritated at first by a weak and gradually increasing stronger faradic current. The appearing increased mucous secretion on the stimulated side should have shown us the directions of the secretory fibres and given us an index for further researches. Absolutely all the methods of irritation contrived and carried out with the greatest care had the most completely similar and like result, that, by irritation of neither the sympathetic and vagus nor of the superior and inferior laryngeal nerves any distinctly visible increase of the mucous secretion took place.

(3.) Division of these nerves singly or on one or both

sides together showed shortly afterwards, and after several days, when the animals had survived the operation—(*a.*) That the mucous secretion took place as before its unhindered progress, and after every drying of the mucous membrane replaced itself with not less speed than by uninjured nerves; (*b.*) that by division of the nerves on one side the tracheal mucous membrane is more injected and secretes larger quantities of mucus than the mucous membrane on the side where the nerves are intact; (*c.*) if all the above-mentioned nerves are divided, and, besides, a piece of the trachea of from 2 to 3 centimetres in length was separated by a firm ligature from all its relations above or below, and this piece could only now receive its blood-supply from the œsophagus behind, there still continued in the ligatured piece of trachea a mucous secretion as before, without any diminution, and in the old intensity.

From these researches we believe we may draw the following preliminary conclusions:—That from the nerve centres there is derived none, or only the smallest possible secretory stimulus to the mucous glands of the larynx and trachea; that, in comparison, the vascularity of the mucous membrane stands in intimate connexion with the force of the mucous secretion; finally, that the mucous secretion in the aforesaid parts can at all events go on undisturbed after complete exclusion of all nervous influences which may by chance come from external sources; that, also, either peripheral, situated in the mucous membrane itself, nerve-centres stimulating the secretion must be accepted, and a similar independent centre must be acknowledged to be in more intimate relationship with the mucous membrane of the air-passages, as in the heart, intestine, uterus, etc., or that the acinose mucous glands of the primary air-passages can be, in general, actively secretory without nervous influence.

II. ON THE INFLUENCE OF COLD ON THE BLOOD-CIRCULATION AND THE SECRETION OF MUCUS IN THE MUCOUS MEMBRANE OF THE LARYNX AND TRACHEA, AND ON THE RELATIONS BETWEEN CIRCULATION OF THE BLOOD AND SECRETION OF MUCUS.—If, in the first place, we apply, from five to ten minutes, warm fomentations over the belly of a cat which has been properly secured, and immediately afterwards ice-cold applications, there comes on, half a minute after the application of the ice, an extremely severe vascular spasm in the mucous membrane of the trachea and of the larynx, which becomes deadly pale and white. This vascular spasm lasts from one to two minutes, and begins then to give place to a gradual relaxation of the vessels. The mucous membrane first begins to assume its normal colour, then it becomes rosy-red, and there appears especially over the tracheal cartilages an already abnormally strong injection. Shortly thereafter the entire mucous membrane becomes blood-red, and in five to ten minutes completely blue-red. Now all the vessels are distended to their utmost, the blue-red colour shows that the velocity of the circulation in the distended vessels has not increased, but diminished.

We notice a diminution during the manifest vascular spasm, whilst in the stage of vascular relaxation a marked increase of the mucous secretions, so that in the proper sense of the word an increased quantity is poured out, but still always clear, watery-like mucus—a true catarrh comes on.

If we now, again, place a nice warm fomentation over the belly, then the blue-red colour of the mucous membrane of the larynx and trachea simultaneously, almost momentarily fades, and gives place to a red colour; nevertheless the injection henceforward remains much stronger than in the original normal condition. Another application of the ice brings about again a similar paling of the mucous membranes, only in, by far, a much smaller degree and much later than the first time.

It follows from these researches (as also from I. 3, *b.*) that diminishing and increasing of the blood-supply to the mucous membrane brings about a like influence on the mucous secretion, that there also exists an intimate connexion between the blood-current and mucous secretion; further, that the effect of cold—for example, of the application of the cold cloths on the previously overheated abdominal walls—is not so imperceptible on the mucous membrane of the air-passages, and does not disappear until after several days, but that the changes produced by the cold are of a very gross nature, and act immediately in the manner of a vascular reflex.—*Contributions to the Physiology and Pathology of the Mucous Secretion in the Air-Passages*, by M. J. Rossbach and Th. Aschenbrandt.

PERISCOPE OF OPHTHALMOLOGY.

By George A. Berry, M.B.

Commotio Retinæ.—This includes cases in which the symptoms following blows on the eyeball cannot be accounted for by any marked anatomical lesion. They have been for long studied by Professor Berlin of Stuttgart. His views on the subject have been collected by Herdegen (*Archiv f. Augenh.* vol. x. 4). Two groups may be distinguished; the first includes seven cases with complete or almost complete loss of vision. Such cases are extremely rare. Much more commonly the visual disturbance is slight, of short duration, and affects only the functions of the central portion of the retina, peripheral vision remaining intact. The objective symptoms in such cases are as follows:—The ophthalmoscopic appearance of the retina remains normal until an hour or two after the injury, when a gradual grayish white opacity makes its appearance, over which the vessels are prominently visible. From experiments performed on rabbits, this appearance has been found to be due to an œdema of the retina following hæmorrhage between the sclerotic and choroid. Berlin is, however, of opinion that the opacity in the retina has no connexion with the visual symptoms, because these are most marked immediately after the injury and rapidly improve, whereas, on the other hand, the œdema is slowly developed, then quickly disappears entirely. The probable cause of the transitory disturbance in central vision is lenticular astigmatism. This is in all cases myopic. It is associated with a contracted, or at least irregular and sluggish pupil, and on this account is supposed to be due to spasms of the ciliary muscle, which may be more or less irregular.

THE CONTINUOUS ELECTRIC CURRENT AS A THERAPEUTIC AGENT IN ATROPHY OF THE OPTIC NERVE AND IN RETINITIS PIGMENTOSA (*Ophth. Hosp. Rep.*, vol. x. 2).—Optic atrophy, like other degenerations in the nervous system, has offered a splendid field for the credulous in therapeutics. Numerous cures have been effected by means of the continuous electrical current, and still more by strychnia. Few therapeutic agents remain long efficacious, however; they gradually become more and more inert, until some one is found sufficiently critical to doubt their efficacy altogether. This has been the fate of the remedies used in optic atrophy; and Dr Gunn, after an extensive trial, is obliged to admit that the success of the continuous current in his hands has been but indifferent. Retinitis pigmentosa seems, however, to be really benefited by this treatment. Four cases are recorded, in all of which some improvement took place, sufficient, as Dr Gunn believes, to warrant a more extensive and prolonged trial in these cases. He observes: "My reasons for believing that galvanism will prove especially serviceable in the treatment of retinitis pigmentosa are founded chiefly on the above experience of its use, and partly on a consideration of the nature of the failure of vision in these cases. The pigment deposited in the layers of the retina absorbs the rays of light which would otherwise penetrate and stimulate certain of the rods and cones. The nerve-fibres in connexion with these retinal end elements are now thrown absolutely out of employment. Corresponding with the distribution of pigment over the fundus, in early cases, we find an *annular scotoma;* but soon the more peripheral field fails also, the part within the blind ring contracts more and more, and finally central vision itself deteriorates. Night blindness now becomes a more prominent symptom, since much of the light is lost by absorption in the pathological pigment; the deficient blood-supply interferes with rapid tissue change, and a degenerated nerve conveys with difficulty stimuli which in themselves are abnormally feeble. The mere fact of the nerve being no longer acted on by normal stimuli assists in the atrophic process; and it is this secondary atrophy from disuse that I believe the continuous current is qualified to prevent."

REMOVAL OF AN IVORY EXOSTOSIS SPREADING FROM THE FRONTAL SINUS INTO THE ORBIT AND NOSE.—Knapp (*Archiv f. Augenh.*, x. 4) succeeded in removing an exostosis, fully larger than a walnut, in this situation, through an opening made along the eyebrow, without causing damage to the movements of the eye. This he did by carefully turning it out of its periosteal capsule with the aid of a small hand chisel. On examining the hole left with the finger, the upper half of the lamina papyracea, as well as the anterior and inner portion of the roof of the orbit, were found to be absent, and the nasal and orbital cavities open. Healing took place by first intention. Knapp believes that it is always possible and safe to remove these tumours whole and subperiosteally. The dimensions of the tumour were (in mm.) 36 × 29 × 24.

ON THE NATURE AND COURSE OF THE GLAUCOMATOUS PROCESS.—The views of Dr Brailey on this difficult subject command attention from the large amount of material which he has examined as curator of the museum at Moorfields. They are (*Ophthalmic Hosp. Rep.*, x. 2) shortly as follows:—Inflammation of the ciliary body, iris, and optic nerve are always present in primary glaucoma, and precede the stage of increased tension. The periphery of the iris is nearly always applied to the cornea, pressed forwards by the engorged ciliary folds or fluid pressure behind it. Then follow atrophy of the ciliary muscle fibres with formation of connective tissue. "The choroid is compressed and atrophic. It rarely presents any traces of inflammation. The lens has not exceeded the normal diameter in any one of the specimens examined, and in most it has been considerably flattened in an antero-posterior direction. It has been advanced but very rarely: the posterior chamber of the aqueous is usually of great depth." The increased intra-ocular tension is first due to an inflammatory hypersecretion from the ciliary body and iris, subsequently to an obstructed outflow through Schlemm's canal. "The glaucomatous inflammation is characterized for the most part by an absence at any stage of any thickening of the ciliary body and iris, and by the lack of fibrinous exudations on them. As compared with other forms of inflammation, it shows only a moderate increase of nuclei in the parts it involves. In some cases there is evidence that the arterial dilatation is secondary to an obstruction in the circulation caused by increased intra-ocular pressure. But it remains remarkable that this enlargement is not seen in the increased tension accompanying serous inflammation of the uveal tract."

Part Fifth.

MEDICAL NEWS.

On the Homœopathic Question.—What of homœopathy? A matter long since settled. No one has any legal right to control a physician's prescriptions, and if he thinks his experience justifies it, he may prescribe the tenth dilution of the mother tincture if he likes. Why not? Faith makes one happy—the patients, too, are made happy (in this or in that sense of the word), and homœopathy never did a doctor any harm. Can we, then, oppose homœopathists as such? Assuredly not, just as little as we have any means of preventing any other form of incorrect prescription. Science, however, has not hesitated to stigmatize homœopathy; and the foremost teachers of therapeutics have cast homœopathy to the dogs, after most conscientiously weighing its merits; many have not hesitated to adopt the scepticism of Skoda, but none have been induced to accept the self-delusive theory of Hahnemann.

The homœopathy of to-day is no science, not even a dogma—just a trade; and many a one to whom allopathic practice came in homœopathic doses has become great by the homœopathic treatment of those who believe in him.

But what is the homœopathy of the present? They give arsenic in small doses in skin diseases, and never push mercury to the extent of producing disturbing symptoms. Well, who does not do the like?

They sweeten expectant treatment with globules of sepia or the like, but they no longer "hold fast to the law of similars" (from which, however, their theory got its name!); they only assert that certain remedies act differently in small doses from what they do in large. Well, no one disputes this.

They also say that, "in reference to medicinal action, dilution can only be carried to a certain limit, beyond which all action on the human frame must cease, as is indeed self-evident." This sounds quite rational, quite allopathic!

We don't know what the Viennese homœopathists think, but those in Berlin have begun to go quite in the teeth of poor Hahnemann.

But what remains to homœopathy when its fundamental principle, pure and simple, is denied?

Nothing, truly, save the favour of the public, who so fondly doat on marvels, and love to be cured homœopathically. We look for some manifestation from our Viennese homœopathists, who of late have become quite modest. Is the term "homœopathic physician" any longer to be sported as the sole relic of the shipwrecked system?

This might, indeed, be a cause of rejoicing; whether it would be honourable, we need not waste words in discussing. *Mundus vult decipi, ergo decipiatur* is a truly practical motto, but what about its morality.—*Wiener Medizinische Wochenschrift*, No. 31, p. 902.

OBITUARY.

PROFESSOR JOSEF SKODA.

On the 13th of June last Josef Skoda died in Vienna after an illness of more than ten years' duration. Students of forty years ago who still survive have surely not forgotten the impression made on their minds by the constant iteration during lecture of the names of Skoda and Rokitansky, the great founders of the great Vienna school of medicine. Medicine had long been taught after a fashion in Vienna as well as elsewhere, but it was these two—and these two alone, though others followed in their steps—who, enlightened by a patient study of nature and of natural laws, broke from the traditions of the past and ventured to found a new school of medicine, which, from small beginnings, has gradually grown till it now fills all the earth, and has blossomed into developments undreamt of forty years ago. It is true that the humoralism with which Rokitansky sought to replace the solidism of Cullen, Morgagni, and Bonetus has long since vanished from the medical horizon. The cell theory itself has followed the crasen-lehre to the place prepared for theories no longer needed; but the influence of Rokitansky, even more than of his school, will never cease to be felt within the domain of pathology. So it is with Skoda. By following in his footsteps and invoking the aid of physics, a measure of accuracy in diagnosis has been attained scarcely even dreamt of by the most sanguine much less than forty years ago. But we cannot forget how much of this we owe to the method taught by Skoda, nor how barren and unfruitful the art of diagnosis may even yet be made by leaning, as of old, on mere opinion, to the neglect of observation and attention to physical laws, which have only one explanation for a phenomenon whether it occurs in a living or in an inanimate body. Skoda was not so learned as Rokitansky, not so eloquent as Oppolzer, nor so ready as Hebra, but he excelled all his colleagues in the accuracy of his judgment and the keenness of his logic. Recognising morbid anatomy as the sole basis for an accurate diagnosis, he endeavoured to unravel the complex phenomena of disease, to reduce them to their simple elements, and *per viam exclusionis* to arrive at an exact diagnosis. None of his old pupils can ever forget his singular accuracy in this, any more than they can forget the remarkable lesson in rational scepticism daily exemplified in his wards. Fresh from other schools, where Cullen's views and Cullen's treatment still reigned supreme, where Hahnemann and his followers were regarded, not as self-deceived enthusiasts, but as knaves who compiled false statistics to make a lie victorious, it was startling to find all that was said of the virtues of the decillionth of a grain of phosphorus more than rivalled by a few grains of extractum graminis. When this phase of medical opinion—originating *de novo* with Skoda, though it was really nothing new—began to make itself felt elsewhere, a change of type in disease was supposed to afford a fitting explanation. But in Vienna there was no room for this, for one of Skoda's most benevolent-looking colleagues was well known to be as truculent a stickler for the virtues of the lancet as even Cullen could have desired. Too often and by too many Skoda has been regarded as one who made everything of diagnosis and nothing of treatment; but nihilism was not the end he sought, merely the only solid foundation his strictly logical mind could discover for that rational system of therapeutics which he essayed to build, and which it was his life-long endeavour to further. Skoda was no orator: his monotonous lectures, either by the bedside or elsewhere, had but little attraction for the idle listener; but the careful manner in which he investigated or ran over the points of a case, the logical accuracy with which he made his deductions, and the pathological knowledge with which he clenched them, fascinated though they did not charm, and left an impression of mental power that quite counterbalanced his somewhat insignificant and ungainly figure and boyish appearance—forty years ago. Skoda was born at Pilsen in Bohemia, on 10th December 1805. He graduated as doctor of medicine in 1831. In 1833 he was made assistant-physician in the K. K. Allgemeiner Krankenhaus, the world-renowned Vienna Hospital. In 1841 he became full physician, and in 1847 he was appointed Professor of Clinical Medicine, an office he resigned in 1871 on account of increasing infirmities. In 1839 Skoda published his only book, his *Treatise on Percussion and Auscultation*, a work which will hand down his name to all time, but which gained him nothing but obloquy from his most distinguished contemporaries. "I am an excellent musician, and have a fine ear," said the old Professor v. Hildenbrand, "but I have not yet heard a pneumonia fiddling."

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THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*An Analysis of the Involuntary Motions of the Hand.* By PERCY R. WILDE, M.B.

IF an endeavour be made to retain the hand absolutely motionless for any length of time, it is found that small, tremulous movements invariably commence, over which we have no complete control. Yet there are few arts or crafts in which an entire command over these movements is not an essential to success. We see the unintended effects in the work of the tyro disappear after longer practice, and his hand is then said to be "steadied," and the tendency to involuntary movement eliminated. That this is only partly true we observe directly he attempts to retain the unsupported hand at complete rest.

If we watch the child in his first efforts at caligraphy, when, in a supreme effort to prevent the excursions of his pen from the pencilled line, he tightens his grasp and strains the muscles of the arm, we see that his momentary success is followed by an impulsive and less controllable movement than before, and the result is an unpremeditated blotch. We observe that the attempt to steady the hand by muscular effort causes the movements to become more violent and spasmodic. While the constancy of the motion is impeded, the movements which take place are rendered too powerful for control.

The surgeon, scientist, or skilled mechanic holds the instrument lightly; he exercises no more muscular force than is required for the voluntary movements, and he further relaxes the muscles not in use, by resting the hand or arm on some stationary body: he has found that the involuntary movements are less noticeable under these conditions. They are modified, not overcome: experience has taught him how to place the hand in the position least favourable for their exhibition, and he is then able to direct their course so that they become moulded, as it were, with the motions guided by the will; and, moreover, the continued effort at resistance causes, as I shall presently show, another set of movements of a reflex character which are to a degree compensatory.

If we consider these tremulous movements of the hand to be caused by a want of co-ordinating power in the muscles of the arm, or due to nervous tremors, and regard their occurrence as abnormal and inconstant, their interest would be entirely pathological; but if, as my early experiments led me to believe, this tremulous motion is rhythmical and physiological, the study of its causation involves problems of some interest and importance.

The most useful of the many contrivances I have used in my endeavour to analyze these movements is one suggested by my friend Dr James, Lecturer on Physiology, Surgeons' Hall, to whose kindness and ready ingenuity I have been much indebted in the course of this investigation. It consists of a float placed in water, with an indicator attached, by which its movements are registered.

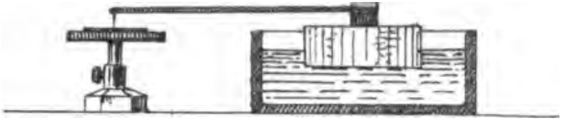
The float is a circular, flat tin body, with a diameter of 5 inches and a depth of 1½ inches. Across the centre of its upper surface is placed a support for the hand, which I call the "bridge." In the centre of this is a socket, into which one end of the indicator is firmly fixed. The indicator consists of a piece of vulcanite 10 inches in length. It carries at its extremity a fine needle.

The float is placed in a vessel (12 × 8½ inches, with a depth of 3 inches) not quite full of water. Its position when in use is with one of the longer sides facing the body. The needle of the indicator rests upon a piece of smoked glass or other prepared surface, which is raised to a convenient height by a movable platform contrived for the purpose. The construction of this instrument, which I call a Kyrograph, will be readily understood by reference to the accompanying sketch. When in use, the float is placed opposite the shoulder of the hand resting upon it. When both hands are on the float I place it opposite the centre of the body, or two floats may be used, one for each hand.

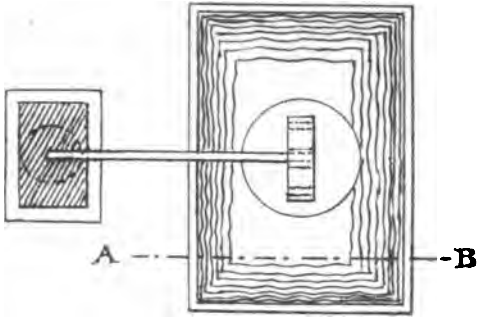
If, before the hand is placed upon the float, a gentle movement is communicated to the water, the float will of course be swayed by it, but the needle remains motionless, acting as a pivot upon which the float oscillates. Sufficient friction for this purpose can be produced by placing a small weight at the extremity of the indicator. This is important to show that the motion of the water forms no factor in the production of the tracings; this, however, can be proved by the use of other instruments which hardly need mention here.

I am very conscious of the probability of error which must accompany any endeavour to separate the purely involuntary from the voluntary motions of the hand. No organ is more directly under mental control, none more capable of peforming complicated movements without the knowledge of the senses, especially when such have, by constant repetition, acquired an automatic character. Thus there are three classes of movements to be considered, viz., (*a*) purely involuntary movements, which are only partially under voluntary control; (*b*) voluntary movements, which follow direct mental control; (*c*) automatic and reflex movements, which are muscular efforts performed without the knowledge of the senses.

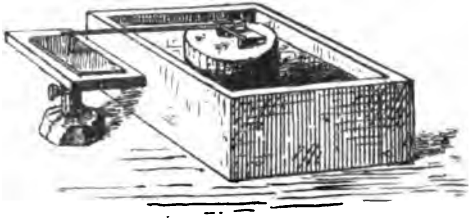
THE KYROGRAPH.



Section A.B.



Plan.



Perspective View.

Scale

The task of distinguishing between these motions proved of less difficulty than I had expected at the outset, it being comparatively easy, after a little practice, to tell by the examination of a tracing the factors concerned in its production. The insensible mental control which can be exercised over the hand makes it very advisable that the person experimented on should be kept in ignorance of the object of the experiment until its completion. While the hand is on the float he should be either directed to keep the eyes fixed on some distant object or engaged in conversation, so that attention shall not be directed to the indicator. I prefer this to asking him to close the eyes, which act increases the nervous sensibility and produces a feeling of constraint which is better avoided. The fingers should be pressed lightly on the bridge, the forearm being placed at right angles to the arm, neither being allowed to touch against any other object. The platform should be placed at such a height that the passage of the needle over the smoked surface is not accompanied by a grating noise: the person will then be unconscious of any movement taking place. The advantage of this instrument is that the float forms a rest for the hand, and no voluntary effort of any kind is required from the person during the experiment.

Adopting these precautions, a large amount of information respecting these involuntary movements can be obtained at the first experiment. We notice that the movement transmitted to the needle is of a rhythmical character, not covering a small portion of the field, as might have been expected, but taking a well-defined lateral course across it. If it is the right hand that is on the float, the direction will be towards and across the front of the body; if it is the left hand, the direction will be away from the body and towards the left. *Thus both hands have an involuntary tendency to move in a lateral direction from right to left.*

If both hands had evinced a tendency to move towards the middle line of the body, it would have been easy to have found a possible explanation; but the well-marked involuntary motion of both hands towards the left side, which I first noticed some three years ago, is less easily interpreted. Examining the mark left by the needle, we at once observe its close resemblance to a pneumographic tracing; but there is this important difference, that while the latter is partly produced by the movement of the chest walls and partly by a revolving cylinder, the tracing of the Kyrograph is entirely produced by the functional movements. But this resemblance to a pneumographic tracing is not an accident, for if we watch the formation of a curve we observe that during inspiration the needle ascends, descending during expiration, the pause between the acts being well marked in some tracings, and, moreover, the number of such curves corresponds with the number of respirations taken by the person while the hand is on the float. On closer examination of one of the respiratory curves smaller undulations are seen, which are undoubtedly due to the circulatory movements. Some tracings present these in very definite order, but they are frequently associated with small nervous movements which so closely resemble them that it is difficult to decide, in such tracings, which are actually due to the circulatory system. Their occurrence is very general, although they have but slight influence in the production of the movement.

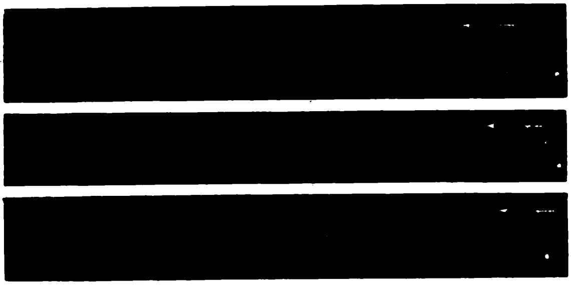
A tracing exhibiting only the circulatory and respiratory movements is, I believe, a complete record of the *normal* involuntary movements of the hand. The greater number of tracings will, however, present deviations from the normal character. This presented a great difficulty at the outset of this analysis, for, having obtained some tracings exhibiting only the features I have mentioned, I expected all subsequent experiments to produce the same result, and was much disappointed at obtaining a large number of tracings which I altogether failed to understand. This arises from the very great difficulty—experienced by some more than others—to free the hand from all voluntary control, especially when attention has been previously directed to it. Thus in some cases the very evident desire to prevent any voluntary movement taking place produces a gentle uniform resistance to the involuntary movements, the result in such a case being that the tracing will exhibit the normal characters, but much reduced in size.

Providing the freedom of the hand is exactly similar in two cases, the size of the respiratory curve is in direct proportion to the degree of expansion of the chest walls; but when the hand is constrained in one case there is a considerable diminution in the size of the curve, although the respiratory movement continues the same.

In some cases no proper curve is obtained at all. The needle remains nearly motionless for a short time, and is then jerked forward and as suddenly stopped, to be followed presently by another spasmodic movement, and so continued. It is curious to observe in these cases that the lateral movement is generally towards the left; but the result is quite valueless, as muscular effort is being used to prevent the movement of the needle. The cause of the jerking movement is of interest, and will be referred to again.

In some tracings, especially those obtained from persons who are much engaged in delicate manipulations, where the hand is still under slight voluntary control, we find, especially in certain portions of the field, a series of complex movements wholly unintelligible unless we have watched their production. The needle, having followed the ordinary movement towards the left for a short time, is suddenly deflected towards the right; the former lateral movement to the left side, immediately recommencing, causes the needle to retrace the same portion of the field, and this may be repeated until the original tracing is quite obliterated. The tendency toward the left side is, however, finally asserted, although the movements towards the right may appear to the eye to entirely overcome the ordinary movements.

KYROGRAPHIC TRACINGS.

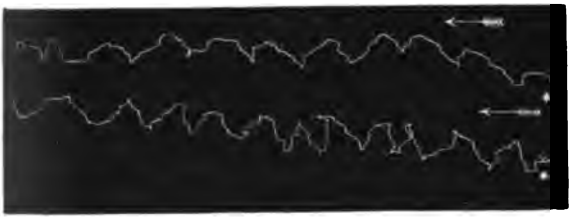


Male.—Respiratory mo ments very well marke

I. Right Hand.

II. Both Hands.

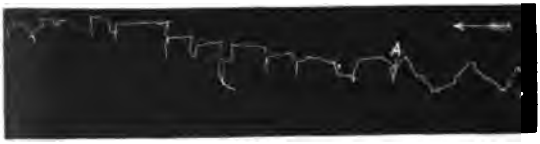
III. Left Hand.



Female.—Much nerv trepidation, but respirat movements well marked.

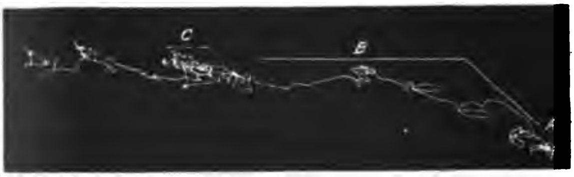
IV. Right Hand.

V. Left Hand.

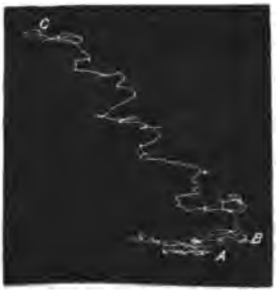


Indicator encounte obstacle at A and moves across the field, with co sequent alteration in cha acter of curve.

A door suddenly clos at ✱ causes reflex muscul movement. The tract shows considerable nerve movement.



Movement is nearly over come by muscular effort a A. She laughs (B) an the needle travels rapidl to C, where control is r gained for a short time.



Bronchitic Patient.—A A reflex muscular move ments overcome voluntar motion. At B a fit o coughing causes the needl to travel rapidly to C. Th direction of the tracing i caused by the person lean ing more forward at each of the five forced expiratory efforts.

✱ = Starting Point. ⟶ **Direction of Needle.**

***N.B.*—Tracings VIII. and IX. where taken with indi cator alone, held betwee thumb and forefinger.**

The causation of this form of tracing can be rendered very apparent by the following experiment:—A person is requested to place his hand on the float, and then close the eyes. Having watched the ordinary movement of the needle for a few seconds, a small book is dropped to the floor, or some slight noise made, so that the person is momentarily startled. Unless this is done too violently, no visible sign in the face or movement of the body will indicate that the noise has been heard; but on examination of the tracing we shall see that at the moment of the shock the hand was deflected towards the right, immediately afterwards returning to the left, forming a loop-like figure, before the ordinary tracing is resumed.

I understand from this that the sudden shock causes a momentary contraction of previously relaxed muscles, and am not surprised to find that this movement causes the needle to be deflected in a direction exactly the reverse of that of normal involuntary motion. This reflex muscular movement is exercised automatically by those whose occupations require steadiness of hand, and in such cases can be fairly called an involuntary movement, occurring as it does when there is an evident desire on the part of the person to leave the hand uncontrolled; it is then somewhat rhythmical in character. A similar series of movements produced by the will can be distinguished by their spasmodic, irregular character alternating with periods of complete rest.

By the exercise of the will the movements of the hand can, of course, be directed at pleasure; but where the motion is involuntary, it may be taken as a general rule that when the causation depends upon the respiratory organs the movement will be towards the left, while movements caused by reflex muscular action will cause deflection towards the right. This natural distinction between the two classes of movements considerably lessens the difficulty of analyzing the more complex tracings, which are frequently of great interest, exhibiting as they do the effects of mental states over the movements. Thus, in a case where muscular control has checked the normal movements, the person's attention being momentarily directed from the hand, especially by such acts as yawning, coughing, sneezing, laughing, etc., the needle is seen to travel rapidly to the left until it is stopped by the return of voluntary control. The movement of the hand during its temporary freedom is, however, frequently interrupted by reflex muscular movements purely involuntary in character. Figs. VIII. and IX. are specimens of such tracings, which are met with frequently during a course of experiments.

My present experience of the instrument is not sufficiently wide to enable me to give any account of the influence of pathological states over these movements; but I have reason to believe that a more extended knowledge of the subject will afford a useful aid to the diagnosis of certain diseases. The simplicity of the instrument and the ease with which these experiments can be repeated by those who have larger opportunities than myself will, I hope, lead to a further investigation of the facts here outlined.

The following are the movements which together compose the tremulous motion of the hand, arranged according to the causation indicated by the kyrographic tracings:—

Normal.	I. The respiratory movement.	Involuntary.
	(a) Inspiratory.	
	(b) Expiratory.	
	II. The circulatory movement.	
Abnormal.	III. The nervous movement.	
	IV. The reflex muscular movement.	Involuntary or Semi-involuntary.

The first of these I regard as the chief factor in the production of the true involuntary movements of the hand, which may be represented in this connexion as one end of a rigid lever upon the other extremity of which certain forces are applied. The study of the mechanical causes which lead to these results has brought me in contact with some interesting facts, which I hope to find an early opportunity of recording.

ARTICLE II.—*Extra-uterine Conception.* By CHARLES BELL, M.D., F.R.C.P.E., etc., Lecturer on Midwifery and the Diseases of Women and Children, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 19th July* 1881.)

I HAVE been induced to bring the subject of extra-uterine conception under the notice of the Society, not only from its being a rare and obscure form of pregnancy, but because it is the most fatal both to the mother and child. Added to these circumstances I have an additional reason, in having a lady now under my care who is suffering from that melancholy accident, and I have the opportunity of showing you some of the bones of the fœtus which were expelled from the rectum at different times.

Extra-uterine pregnancy is an accident which is not confined in its occurrence to women, as it is occasionally met with in the lower animals, and its occurrence is equally unaccountable in all classes. It was first noticed, apparently, in the eleventh century by Albucasis, an Arabian physician, who reports a case in which an abscess formed at the umbilicus, and when it burst the bones of a fœtus were discharged. Little notice of this form of pregnancy is found after that period until the year 1531, when Polinus referred to the case of a woman, the mother of nine children, in whom an abscess formed in her left hypochondrium in her tenth pregnancy, which gave exit to a male child that lived eighteen months; but the mother died in great suffering on the third day after the expulsion of the child. In the early part of the sixteenth century Cornax dilated an ulcer near the umbilicus and removed a fœtus in a semi-putrid state, which had apparently been retained five years. Felix Platerus relates a case of a concubine of one of the sacerdotal orders, who in the third pregnancy suffered severe pain for eight days, resembling the pains of labour, which ceased without delivery. A variety of complaints came on, followed by the formation of a small swelling above the umbilicus, from which, on making an incision, an entire fœtus was removed in a semi-putrid state, and the patient made a good recovery. Cordœus, a cotemporary of Platerus, relates a case of a lady who had been married many years without having a family, when at the age of forty she had all the signs of labour without any fruitful result. The pains subsided, but they were followed by prolonged bad health, which confined her to bed for three years, when she died. On opening the abdomen a fœtus was found encased in a bony crust. It must have remained in the abdomen twenty-eight years. Primrose relates an interesting case of a woman aged thirty, who, after giving birth to seven children, conceived again in 1591, when everything seemed to go on as usual until the ninth month, when lumbar pains came on, but they terminated without any satisfactory result, and the fœtal movements ceased. The abdomen on the right side remained large. Her menses returned and continued regular for two years, when she again had signs of pregnancy, attended with fœtal movements and increased size of the abdomen. At the eighth month the fœtal movements were most violent, and they were accompanied with pains in the lower part of the abdomen. These ceased, as on the former occasion, without delivery. After three months a tumour formed on the right side of the abdomen, quite distinct from the swelling on the left side. An abscess formed on the right side of the umbilicus, and when it burst it discharged a quantity of pus, along with fœtal bones. This led to the swelling on the left side being opened, when the bones of another fœtus were found and removed. Hildanus mentions a woman of forty-five years of age, the mother of eleven children, who again became pregnant; but the pains, resembling those of labour, terminated without delivery. She afterwards became subject to severe pains resembling labour, and gradually a large tumour formed at the umbilicus, which was opened, and the skeleton of a fœtus was removed. Cicatrization followed, and the patient was restored to health.

I have referred to these cases not only from their extreme interest, but because they seem to point out the treatment which it would be justifiable and judicious to follow in many cases.

Authors have divided extra-uterine pregnancy into three orders, designated the ovarian, the tubal, and the ventral. These may be readily distinguished after death, but it is impossible to do so during life; and even if it were possible, it would lead to no change or improvement in the treatment.

Symptoms.—The symptoms are extremely variable and uncertain, which renders a diagnosis very difficult in the early months. In some cases they differ little from natural pregnancy, and the health remains for some time unimpaired, or even to the period of ordinary pregnancy. In other cases the symptoms resemble those of some uterine or ovarian disease, and are attended with such intense suffering in the abdomen as in some cases to produce syncope. In some cases the catamenia are not suspended, in others they are irregular, in the early months, being occasionally very profuse. It is not unusual for clots like moles to be expelled from the uterus, giving the impression that abortion has taken place. The breasts enlarge, and the areola becomes dark. There is occasional sickness, and sometimes the stomach is so irritable that it rejects everything. The fœtal movements are felt, but not in the natural situation. There may be constipation, but more frequently there is diarrhœa with violent tenesmus, especially if the tumour is in the neighbourhood of the rectum; at the same time there is suppression of urine. Occasionally there is excruciating pain near the umbilicus resembling colic. Champion refers to a sense of weight and uneasiness in the pelvis, which extends in some instances up to the kidneys, as a symptom especially to be observed. On examination per vaginam the uterus is generally slightly enlarged, but not to the extent corresponding to the period of pregnancy. In some cases there is a difficulty in reaching the os uteri; in others, in place of being raised up it is pressed down, so that it protrudes from the vulva. Astruc was of opinion that this form of pregnancy was more apt to occur in unmarried women and widows than in married women of regular habits. But it is confined to no period of life after puberty, as there are cases recorded as occurring in girls of thirteen as well as women above forty-six.

The period at which the fœtus dies is variable. In some cases it survives until the ninth month of gestation. The period at which the mother dies is equally variable. According to Dr Campbell, "in ninety-eight cases in which he could decide, or nearly so, on the stage of pregnancy, the fœtus died at the close of nine months; seven about the seventh month; one in the sixth month; two in the fifth month; two in the fourth month; and one at the end of the first month.

The accident occurred "in the first pregnancy in four cases; in the second, in eleven cases; in the third, in thirteen cases; in the fourth, in four cases; in the fifth, in four cases; in the sixth, in four cases; in the seventh, in two; in the eighth, in two; in the ninth, in one; in the tenth, in one; in the eleventh, in one; in the twelfth, in one; and in the thirteenth, in one."

This author mentions the remarkable instance of two patients who had three extra-uterine fœtuses in their abdomen at one time, and both recovered, the decomposed fœtuses having been removed through the walls of the abdomen. He also states that nine women became pregnant in the natural way while the intra-uterine fœtus was still in the abdomen, one four times, one six times, and one seven times.

The period which the fœtus may be detained in the abdomen is very variable and uncertain, depending in a great measure on the constitution of the patient; hence it varies from three months to fifty years. In twenty-six of Dr Campbell's cases the bones of the fœtus were evacuated through the rectum, and six of the mothers died. In twenty-nine cases the bones of the fœtus were evacuated through the walls of the abdomen, and three of the mothers died. In eight cases the fœtal bones were discharged from the vagina, and three of the mothers died.

Cause.—This is exceedingly obscure, and although many theories have been suggested, no satisfactory one has been arrived at. It has been supposed to be occasioned by a fright, fear, anxiety, or a fit of passion occurring during connexion; but the truth is, that we are still totally in the dark in regard to its cause, therefore no prophylactic has hitherto been suggested.

Diagnosis.—This is extremely difficult in the early months, if not impossible, but as pregnancy advances it becomes more practicable through the means of the stethoscope and the uterine sound, and by examination per vaginam and per rectum. If we find that the size of the uterus does not correspond with the period of pregnancy, our suspicions may be roused, and they may be confirmed if the sounds of the fœtal heart are not heard in the usual place, and being at a distance from the uterus, also by the continuance of the catamenia, and by the os uteri being open; in which circumstances it will be justifiable to introduce the uterine probe, which in all probability will throw much light on the nature of the case.

Prognosis.—The prognosis of the case must always be of the most cautious kind, as much must depend on the constitution of the patient, and as inflammation may suddenly come on and prove fatal. Therefore it is impossible to give a definite or satisfactory opinion as to the likely termination.

Treatment.—This must be entirely palliative, in many cases depending on the symptoms which arise. Everything which is likely to excite the patient is to be avoided; she should therefore refrain from active exertion, and remain very much in the recumbent posture. The bowels should be regulated by mild medicines, and probably the best will be castor oil or Gregory's mixture. The pains should be moderated by the bromide of potassium, chloral, or camphor, rather than by opium, which is apt to interfere with digestion. It may be given, however, with great advantage in the form of suppository. The strength must be supported by nourishing and easily digested food. If there is irritability of the stomach it may be overcome by effervescing draughts, and the violent acidity by antacids, such as the bicarbonate of potash and bismuth. Should inflammation come on it must be subdued by antiphlogistic means, in which leeches may be included. Poultices are often very soothing, especially when an abscess is obviously forming, which is indicated by frequent rigors. The moment the abscess is matured it should be opened, as in many instances it may contain the bones of the fœtus. After the expulsion of the fœtal bones stimulants and tonics should be given.

The Cæsarean section has been suggested, and it has been practised with considerable success on the Continent. Dr Campbell[1] refers to thirty cases in which "gastrotomy," as he calls it, had been performed, and twenty-eight of them proved successful, so far as the mother was concerned. In nine cases in which the operation was performed during the life of the child or soon after its death, all the mothers died. He adds that out of fifty cases in which this operation was performed, only two of the children were saved. Therefore, so far as the children are concerned, the operation is not encouraging.

The case of the lady now under my care is one of deep interest, and I am in hopes that she may ultimately be restored to health. She is now in her thirty-seventh year, and is the mother of three children. About four years ago she became pregnant, as she thought, in the natural way, although she felt very different from what she had ever done before, and her general health became much impaired, and she had frequent sickness and vomiting. About the fourth month severe pains came on, leading her to suppose that she was going to have a miscarriage, but they subsided without that result. She became a confirmed invalid. She suffered much pain in her left groin and lumbar region. The abdomen became immensely enlarged, and her menses ceased for ten months, after which period they returned and continued regular until a few months ago, when she was seized with typhus fever, followed by rigors, frequent vomiting, diarrhœa, and dysuria. These symptoms became modified after the expulsion of some small bones, consisting of a scapula, a tibia, and a rib, etc.

She now came entirely under my care, her country medical attendant having fallen into bad health. On examination I found the abdomen much distended, which prevented any tumour being felt externally, and there was considerable tenderness on pressure on the left hypogastric region. On examination per vaginam the uterus felt slightly enlarged and retroverted, the os was sufficiently dilated to admit the point of the finger, but no tumour could be felt in the vagina; on examination per rectum, however, a tumour about the size of a fœtal head could be felt high up on the left side of the spine, and was exceedingly tender to the touch. I therefore concluded that a large portion of the fœtus still remained.

On this occasion she mentioned that she had had repeated blisters applied to the abdomen without any benefit. She therefore had spongio peline sprinkled with spirit of camphor applied in place of the blisters and large poultices she had been using; and for the irritability of stomach, she had the liq. bismuthi in the form of effervescence, along with the bicarbonate of potash and citric acid. After the sickness was allayed she was ordered to take a dose of castor oil; when it acted it brought away a quantity of bones, among which there was a large portion of the scalp, along with a quantity of white fluid, which proved to be principally composed of pus.

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[1] *System of Midwifery*, p. 641.

As she still suffered pain she was ordered to use morphia suppositories, which gave her great relief and comfort. After the introduction of the first she slept nine hours. Pus still came away from the rectum, accompanied with tenesmus, and occasionally some small bones were expelled. She was ordered to have nourishing diet and port wine, and, when the irritability of the stomach came on, to take the effervescing draughts and ice.

She now came to Portobello, for the benefit of change of air. The abdomen was now much diminished in size, and on examination per vaginam the parts were natural, but the rectum was found loaded. She was therefore ordered to have castor oil, which brought away a large quantity of scybalous matter, which nearly filled a large *pot-de-chambre*, but there was no pus or bones. On examining the rectum it felt much relaxed, but there was no tumour. I therefore concluded that many bones must have come away without being observed; but four days after this examination she had a return of pain and puffiness of the abdomen, accompanied with irritability of stomach, and rigors, followed by a profuse discharge of pus from the rectum, with several fœtal bones, among which were the other scapula and the other tibia. She felt considerably exhausted after this, but in a few days she was able to go and sit for an hour and a half on the sea-beach, and three days after that she returned home, a distance of upwards of thirty miles, and suffered comparatively little fatigue.

She is now getting nourishing diet with port wine, and occasionally a little brandy, along with Easton's tonic syrup.

A month after the above report she had a return of sickness and violent pain in the rectum, and when the bowels were moved the other half of the scalp was expelled. But pain in the rectum still continued, and the bowel was so much relaxed that the suppositories which had given so much relief could not be retained. An injection of alum and opium was therefore recommended.

ARTICLE III.—*Statistics of Operations Performed in Mr Bell's Wards, Edinburgh Royal Infirmary, during the Summer Session.*

Reported by J. MAXWELL ROSS, L.R.C.S. Ed., House Surgeon.

DURING the three months of the summer session, May, June, and July, fifty-four operations have been performed. Of these, fifty-two have recovered; two have died. There have been ten amputations with one death, and three successful excisions of joints. The case of amputation which died was interesting chiefly because of the state of the heart and bloodvessels. The patient, a man well known in East Lothian, was admitted to X. Private Ward on 13th June, suffering from gangrene of the anterior portion of the foot. He was fifty-six years of age, but seemed at least ten years older. The gangrene was a mixture of senile and moist, and had appeared, a week before admission, in the second toe. This had been carefully treated by his own medical attendant, but unavailingly, as the gangrene continued to spread. After a consultation with Mr Bell, it was agreed that he should come into hospital for treatment. On admission, most of the toes were dead or in a dying state, and the anterior portion of the foot was red, glazed, and cold. No pulsation could be got below the femoral. Amputation was proposed as the only remedy left, and the patient agreed to have the foot removed at the ankle by Syme's operation. On the following day (the 14th) the operation was performed. Before he was taken into the theatre, the heart was carefully examined by Dr Brakenridge. He came to the conclusion that the organ was probably fatty, the aorta dilated and atheromatous, and advised that chloroform should first be used to put the patient over, and ether employed afterwards to keep up the anæsthetic effect. This was done successfully. No tourniquet was used, Dr Miller compressing the limb slightly, and very little blood was lost. Besides the anterior tibial and the two plantars, four or five small vessels were tied. Torsion was not employed on account of the very atheromatous state of all the arteries. All through the antiseptic treatment was carefully carried out. On the fifth day eucalyptus gauze was substituted for carbolic, which was irritating too much. The irritation disappeared and the wound went on well. The patient complained very little of pain, expressed himself as feeling all right now, and spoke of going home soon. The gangrene showed no signs of reappearing in the stump; but on the morning of 24th June he suddenly became very livid. The breathing was greatly embarrassed. He complained of pain in the right side of chest and abdomen. No pulse could be felt at the wrist. Embolism of the right pulmonary artery was diagnosed. Treatment was naturally of little avail. He died within twenty minutes after the first appearance of the symptoms. The following is Dr Hamilton's report of the post-mortem examination, slightly condensed:—

Body well nourished. Rigor absent. Pupils slightly contracted. Right foot amputated at ankle; wound healing and granulating. Heart weighed 1 lb. 2 oz. Aortic valve incompetent. Pericardial sac contained an ounce and a half of serum. Heart loaded with fat. Aorta intensely atheromatous, ulcerated, calcareous, and thickened. Atheromatous spots on mitral and aortic cusps. Muscular fibres of left ventricle much speckled and apparently fatty. Right auricle somewhat dilated. There was a long branching clot at commencement of pulmonary artery, and a similar one in the aorta. The ulceration of the aorta continued down to the lower part of the thoracic division. Iliac arteries rigid, but not calcareous. No thrombus in vein. The coronary artery going to the left ventricle was dilated and atheromatous. Microscopically the fibres in the left ventricle were seen to be fatty. Right pleural cavity contained twenty-one ounces of serum; the left contained eighteen. Left lung œdematous; right, œdematous and congested. Liver somewhat congested. Spleen weighed 7¾ ounces; Malpighian bodies very large. Capsule of right kidney came off easily. Organ in a state of cyanotic induration. Left kidney in a similar condition.

The other case of death occurred after an operation for cancer of the lower portion of the rectum. The patient, a man æt. 58, came from a provincial hospital, begging to have something done for his relief. He stated that he had first noticed symptoms of his ailment six months previously. On examination a round, polypoidal mass, forming almost an annular constriction of the anus, was felt. This mass passed up much further anteriorly than posteriorly. It was diagnosed to be adherent to, but not infiltrating, the prostate. The serious nature of his case and the risk of operation was explained to the patient; but he wished strongly that something should be done, and, as it seemed that the disease could be entirely removed, it was resolved to give him the chance. The operation was performed on May 17th by means of the thermo-cautery. The incision was commenced in the middle line of the perineum, midway between the anus and scrotum, and brought elliptically round the anus back to near the coccyx. The dissection round the bowel was made by means of the cautery as far as the prostatic sheath in front, when the fingers were used to separate the tumour from that structure and the recto-vesical cul-de-sac of peritoneum. The peritoneal cavity was not opened into. The lower end of the bowel, with the mass of disease, having thus been set free from the surrounding structures, was pulled down and cut through about three inches above the anus, fairly wide of the disease. The cut end was then stitched to the skin. Patient never rallied well from the operation. He died about 12.30 P.M. the same night, apparently from shock. Post-mortem examination was not allowed.

Three excisions of joints were performed. In each case a different joint was affected, viz., the elbow, the wrist, and the knee. All of them were excised for disease. The operation for excision of the wrist was that first invented by Dr Gillespie, late surgeon to the Infirmary. The after treatment in the knee case was that recommended by Dr Heron Watson, and it proved very successful.

Ten tumours were removed. Five of these were of a simple nature. The remaining five were malignant.

There were two cases of lupus treated by means of Volkmann's spoon and the chloride of zinc.

Nine operations were performed on the bones. Five of these were for necrosis. In two cases tarsal bones (os calcis and cuboid) were removed for caries. In these the joints of the tarsus were not affected. In another patient the head of the tibia was trephined for disease, and in the last osteotomy was performed for a tibia very much deformed by rickets.

Tenotomy was done in five cases. In one instance the sterno-mastoid was affected. In the others the tendons of the feet were at fault.

Two operations were performed on the face.

On the genito-urinary tract nine were performed. Three of these were for stone, one in the urethra, two in the bladder. In the two latter lithotomy was done. One of the patients was a boy aged 4 years; the other was a man aged 32, who had been previously cut for stone. The incision was made in the line of the old cicatrix. It healed with remarkable rapidity. On the day following the operation the urine came by the natural passage as well as by the wound, and on the thirteenth day he was totally healed and able to leave hospital.

Three operations were performed on the rectum, one of these being the excision of the lower end previously referred to.

The statistical list is as follows:—

Amputations.	No.	Recovered.	Died.
Thigh	1	1	0
Leg	2[1]	2	0
Foot (Syme)	5	4	1[2]
Toe	1	1	0
Finger	1	1	0
	10	9	1
Excisions.			
Elbow	1	1	0
Wrist	1	1	0
Knee	1	1	0
	3	3	0
Tumours.			
Fatty	2	2	0
Cystic	2	2	0
Neuroma (of Stump)	1	1	0
Sarcoma of Toe	1	1	0
Sarcoma of Breast	1	1	0
Scirrhus of Mamma	1	1	0
Epithelioma of Lip	2	2	0
	10	10	0
Lupus	2	2	0
Operations on Bones.			
Necrosis of Ilium	2	2	0
„ Femur	1	1	0
Carry forward,	3	3	0

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[1] One of these was a primary, done for a railway accident.

[2] This was the case of gangrene referred to in the report.

Operations on Bones—continued.

	No.	Recovered.	Died.
Brought forward,	3	3	0
Necrosis of Tibia	2	2	0
Trephining Tibia	1	1	0
Excision of Os Calcis	1	1	0
„ Cuboid	1	1	0
Osteotomy of Tibia	1	1	0
	9	9	0
For Ingrowing Toe-nail	1	1	0

Operations on Tendons.

	No.	Recovered.	Died.
Wry-neck	1	1	0
Talipes Equino-varus	3	3	0
Talipes Varus	1	1	0
	5	5	0

Operations on Face.

	No.	Recovered.	Died.
Double Harelip	1	1	0
For Cicatrix	1	1	0
	2	2	0

Operations on Genito-Urinary Tract.

	No.	Recovered.	Died.
Vesico-vaginal and Recto-vaginal Fistula .	1	1	0
Holt's Operation for Stricture . . .	1	1	0
Lithotomy	2	2	0
Urethral Calculus	1	1	0
Rad. Op. for Hydrocele	2	2	0
Phymosis	1	1	0
Castration	1	1	0
	9	9	0

Operations on Rectum.

	No.	Recovered.	Died.
Fistula in Ano	1	1	0
Excision of Lower End of Rectum . .	1	0	1
Hæmorrhoids	1	1	0
	3	2	1

Summary.

	No.	Recovered.	Died.
Amputations	10	9	1
Excisions of Joints	3	3	0
Tumours	10	10	0
Lupus	2	2	0
Operations on Bones	9	9	0
„ Nail	1	1	0
„ Tendons	5	5	0
„ Face	2	2	0
„ Genito-Urinary Tract . .	9	9	0
„ Rectum	3	2	1
	54	52	2

ARTICLE IV.—*An Unusual Experience in Placenta Prævia.* By JOHN GLAISTER, M.B., F.F.P.S. Glasg., etc.

(*Read before the Edinburgh Obstetrical Society,* 13*th April* 1881.)

PLACENTA PRÆVIA is at all times a condition which adds considerable anxiety to the practitioner and a very much greater degree of danger to the life of the patient and her offspring than most of the conditions in which we are called upon to assist a woman in the trials of maternity. My experience consists of *five* cases, and these occurred within *nine* months—a somewhat unusual experience, no one will gainsay.

Within the year 1880 I met with five cases of placenta prævia, in three of which the placental presentation was complete, and in the remaining two it was partial, but nearly complete. My first case was in March, second in May, third in June, fourth in July, and the fifth in November. By a curious coincidence three of them happened in the same street, within one hundred yards of one another, the fourth being in a side street running off the street previously mentioned, but about two hundred and fifty yards further away. Four of them were at the full time, the fifth at 5½ months. In these four cases the children were delivered by turning, three being born dead. The fourth, however, had cardiac pulsations, but resuscitation failed. In the fifth case the fœtus was not born.

As regards the mothers the result is briefly this:—Two of them made good recoveries, though slow; the third died of chronic phthisis four months after; the fourth died suddenly about three weeks after, having been able to move about again; and the fifth died before delivery. In two of the cases there were repeated floodings before confinement, and, curiously enough, they made the best recoveries; in another (the fifth) there were *two* sharp hæmorrhages; in another (the third), one; and in the fourth there was no premonitory hæmorrhage whatever. In all the cases the hæmorrhage during labour was very copious, and, as has been pointed out by some writers on obstetrics, may so far account for the still-births.

CASE I.—Mrs A., ætat. 36, the mother of several children, was confined of another on the 25th of March, a midwife being engaged to attend her. She had had repeated floodings during the latter months of pregnancy. Labour began on the forenoon of the 25th, and was attended from the beginning with considerable hæmorrhage. I was asked to see her in the evening about 8 P.M. Her pulse was then very weak and rapid; face exsanguine and bathed in cold sweat; extremities cold; respiration sighing; and she was being seized with frequent fainting fits and retchings. Vaginal examination revealed complete prævia. The placenta was broken up into a shreddy condition, particularly in the central part, this

having been done by the midwife's finger in order to discover the presentation. Liquor amnii had drained away. Hæmorrhage had nearly ceased, and the vaginal walls were quite dry and glazy to the touch. A cranial presentation was found beyond the placenta.

Considering all the circumstances, I concluded to do nothing precipitate, therefore satisfied myself by plugging the vagina with a large sponge wrung out of sharp vinegar, and administering opiates and small but frequently repeated quantities of concentrated nourishment and stimulants. About 11 P.M. I left her somewhat improved, with the instructions that I should be sent for should any fresh bleeding occur.

Next morning about nine I was sent for, owing to pains having come on, and arrived at the house just in time to see her delivered of a still-born child. The placenta was easily expressed, and the uterus contracted nicely. From the mangled state of the placenta, I am not prepared to assert positively that the child was born through it or not. She made a good but slow recovery.

CASE II.—Mrs P., ætat. 32, the mother of two children. This case was met with under nearly similar circumstances, in so far as it had originally been under the care of the same midwife. She had repeated attacks of hæmorrhage before delivery, which had much weakened her. Labour began on forenoon of 3rd May, attended by very severe flooding. I was asked to see her about 6 P.M., the flooding still continuing, and she was seized occasionally by attacks of syncope. She presented most of the general appearances of the first patient. Vaginal examination revealed partial prævia. The placenta, occupying about two-thirds of the cervical zone, was lacerated and rent in the same way as before. Through these lacerations a cranial presentation could be felt, and the fact ascertained that the "waters" had drained away. On account of the hæmorrhage and the fairly well dilated condition of the os, I concluded at once to deliver by turning. I accordingly delivered her of a still-born male child with a good-sized head, which occasioned a little trouble. Placenta was expressed within ten minutes after, the uterus contracting nicely. The loss of blood from beginning to end of labour was very considerable, but she made a slow and steady recovery.

CASE III.—Mrs N., ætat. 39.

Previous History.—She had never borne a child at full time, but had a miscarriage at six months several years ago. About November or December 1879, owing to a swelling in her abdomen, she consulted a surgeon, who, she said, pronounced it a tumour in connexion with the womb. As the swelling continued to increase, she consulted another surgeon, who declared she was pregnant. Labour began on the afternoon of 5th June with a severe flooding, examination at once revealing it to be a case of placenta prævia. The vagina was at once firmly plugged, but, nevertheless, the hæmorrhage was not completely controlled. Pains came on slowly. The case was one occasioning not a little anxiety, owing to her age, its being her first confinement, her very nervous temperament, the existence of a heart affection, and a frequently intermitting pulse. About 9.30 P.M. the os became sufficiently patent to allow the introduction of three fingers, when it was ascertained that the placental presentation was complete. We then concluded to turn. After turning, which was not very easy, the child was born, inanimate to all appearances; but we discovered occasional cardiac pulsations, which incited us to perseveringly carry on attempts at resuscitation till even these had ceased. The mother was, after delivery, wonderfully well. Her pulse was of fair strength, but rapid and more frequently intermittent. The placenta was delivered easily. She recovered so well that attendance ceased at the end of two weeks. About a week after this the medical friend who was with me during the case was hurriedly called one night to see her, she having been taken suddenly and seriously ill. On his arrival a few minutes after, he found her in bed, gasping wildly as if for breath, with a pale, pinched face. In about two minutes after, she was dead. It seems that she had been visited by friends that evening, and had been unusually animated. The nurse, fearing some harm from this, advised her to go to bed. This was done, and she was in the act of stepping into bed when she was seized with this sudden attack. The opinion of my friend was that she had died from internal hæmorrhage, probably due to rupture of an aortic aneurism. Unfortunately, no post-mortem examination was obtained.

CASE IV.—Mrs G., ætat. 38, mother of a large family.

Previous History.—Nothing of note occurred in her previous child-bearing history, but she had suffered for some years from chronic bronchitis, and had also been addicted to the abuse of stimulants. On the 3rd July I was called to see her, owing to the occurrence of flooding, which I found was due to placenta prævia. She had then a very severe cough and copious muco-purulent expectoration. Examination of lungs showed moist bronchial râles over whole chest, with prolonged expiration. She was much emaciated. Three days after I was again hastily summoned. I at once plugged firmly the vagina and waited. I was quite expecting to find her collapse from loss of blood if it continued, on account of her debilitated state. After an interval of about two hours the os had sufficiently dilated to enable me to detect a *partial* placenta prævia and a cranial presentation beyond. Before this the membranes had ruptured, and the waters were drained away. Hæmorrhage continued, and I concluded at once to turn. This was done, and a child delivered still-born. She was now very low, but on the free administration of stimulants she rallied somewhat. Expression of uterus failed to expel placenta, and on introducing my hand I found it adherent in all its attachment. For some days after she looked as if she would not rally; temperature above normal, and pain over uterus. Abundant purulent discharge now made its appearance from the vagina, which, however, abated on the use of injections of warm water and Condy's fluid. She, however, failed to get up her strength, the lung symptoms asserted themselves more strongly, she became more and more emaciated, evidences of a cavity in right apex now existed, and she died about four months after confinement.

Case V.—Mrs G., ætat. 30, the mother of one child.

Some years before she had been delivered of a male child after a difficult instrumental delivery, during which she says she was much bruised and cut. From this there resulted a vesico-vaginal fistula. The persistent dribbling away of urine, and an after affliction of tape-worm, had both physically and mentally depressed her, so that when I was called to see her she had lost very much in bodily weight. I was called to visit her on 4th of November on account of a flooding. Vaginal examination revealed a patulous os, into which, however, the forefinger could hardly be introduced. It further revealed a vesico-vaginal fistula high up, just in front of anterior lip of os uteri. I contented myself with thinking it a threatened abortion, and treated it accordingly. From this she recovered. About a week after, however, she had another attack of flooding. During the forenoon of the 25th I was told that she had been flooding sorely since 5 o'clock that morning, and I found her very much weakened through loss of blood. The os was now wide enough to admit the finger, and the doughy placental mass was at once discovered. I plugged, waited, and administered stimulants. The plugging controlled the hæmorrhage till about 4 P.M., when it again appeared, but not to any serious extent. About 8 P.M. the bleeding became very free; and separating, as far as I could, the placenta according to Barnes's method, I again plugged. I adopted this procedure in preference to manual dilatation of the os, because I feared the shock resulting from the introduction of the hand into the uterus might induce fatal syncope. The result of the case proved in favour of my judgment, because she rapidly sank after this, and died about 9 P.M. The placental presentation was complete. This case seems to me interesting in so far that conception had resulted after the establishment for several years of a vesico-vaginal fistula.

It seems to me, from the above experience, that no hard and fast line can be drawn as to the treatment of cases of this kind; and that however strongly some may insist on the speedy delivery of the child, each case must be treated on its individual merits, since we do not meet with it in patients of the same strength, nor at the same period of time in the course of pregnancy.

ARTICLE V.—*Report of a Case of Obturator Hernia, where an Operation was unsuccessfully performed; with Remarks.* By DAVID JOHNSTON, A.M., M.D., Honorary Consulting Surgeon, Royal Infirmary, Montrose.

(*Read at the Annual Meeting of the Forfarshire Medical Association at Montrose, 14th July* 1881.)

ON Friday, 13th May last, I was requested by my professional neighbour, Dr Robertson, Auchinblae, to meet him in consultation on the case of Miss L., on whom he had been in attendance since the previous Sunday.

Miss L. was 58 years of age, generally healthy, but for the last six years had every few weeks suffered from sudden attacks, of five or six hours' duration, of very intense pain in the abdomen and upper and inner part of the right thigh, not, however, accompanied by vomiting. Immediately after the cessation of these paroxysms she felt well and able to attend to her usual duties. On none of these occasions was medical advice sought for. At no time was she sensible of the existence of any swelling in the groin or upper part of the thigh. On the Sunday previous to my seeing Miss L. she had been at church in the forenoon, in her usual state of health, her bowels having been freely moved on that day. In the course of the afternoon she was seized with an attack such as she had been accustomed to, but on this occasion it was accompanied, for the first time, by vomiting. Dr Robertson saw the patient in the course of the evening, and, in my opinion, treated her most judiciously for the next four days, using opiates, fomentations, enemata, and the usual remedies for such a condition. During this period the pain in the abdomen continued very intense; the vomiting was incessant; the bowels were tympanitic, and had responded to none of the enemata administered. Dr Robertson, when I met him, informed me that he was sensible of the existence of an obscure, flat, deep-seated swelling in the upper and inner part of the right thigh, rather lower down than the usual seat of femoral hernia, and only to be detected by firm pressure with the points of the fingers. He had attempted by the usual means to reduce this swelling, but without success.

The history just narrated indicates the condition of the patient when I saw her.

On exposing the parts usually the situation of hernial protrusion, I could discover no tumour or want of symmetry, and, after careful manual examination, said to Dr Robertson that I was unable to detect a rupture. He requested me to feel with more firmness, and with the very points of the fingers, a little below the usual seat of femoral hernia on the right side. On acting on this suggestion I was sensible of feeling a flat, ill-defined swelling, having almost the diameter of a crown-piece. I was unable to insinuate my fingers either round or under it, or to move it in any direction. Although in some doubt in regard to the nature of this swelling, the symptoms, the very critical condition of the patient, the duration of her illness, and the rules of good surgery, demanded immediate action, and it was decided at once to expose it and ascertain whether or not it was a hernial protrusion.

This was accomplished by making a crucial incision over the tumour and dissecting off its various coverings. Two very considerable vessels—branches of the external pudic and obturator arteries—were divided and secured. The pectineus muscle was thus fairly exposed, but the tumour was as indistinctly felt as before the commencement of the operation. On lifting up and turning aside the edge of this muscle, the tumour, the size of a pigeon's egg, was now exposed, lying along the margin of the adductor brevis, but not in any degree overlapped by it. The swelling had assumed the globular form and all the attributes of a hernial tumour immediately on the removal of the pressure of the muscle. It was now evident we had to deal with a case of obturator hernia. Without opening the sac, the stricture formed by the very sharp edges of the obturator ligament was notched in a direction directly upwards. After this incision the swelling continued as large and tense as before, and the probe-pointed bistoury was again introduced and a slight incision made inwardly. The margin of the obturator foramen felt as hard and sharp as the edge of a knife. The forefinger could now be carried through the enlarged opening into the pelvis with freedom. The tumour at once, and without manipulation, became flaccid. It still, however, communicated the feeling that it consisted of something more than the sac, which was opened and found quite empty; but its walls were so thick, hard, and elastic, that the edges of the wound retracted to such an extent that the whole interior of its cavity could be distinctly seen at the bottom of the deep wound. It did not contain a drop of fluid. It was found absolutely necessary to divide the pectineus muscle to the extent of 2½ or 3 inches to afford space and a view of the parts. Taking into account the possibility of bowel and sac having become agglutinated, and that the former might have been wounded, the edges of the sac were carefully stitched to the margin of the external wound, and a pad of lint soaked in carbolic oil applied and retained by a bandage, which was adjusted in the usual manner.

As soon as the patient recovered from the effects of chloroform, she expressed herself as comfortable and free from pain. There was no recurrence of vomiting for thirty hours. Indeed, vomiting only occurred on four occasions subsequent to the operation. For four days liquid nourishment and ice were partaken of with relish in small quantities, and a morphia suppository was administered every night as well as immediately after the operation. For the first four days the condition of the patient was hopeful and comfortable; a fair amount of sleep was enjoyed every night; the pulse ranged from 84 to 96, and a successful issue was confidently anticipated. On Wednesday, the fifth day after the operation, an enema of tepid water was administered, and on every following day during the patient's life. No fæcal evacuation followed any of these repeated enemata, and after the eighth day she gradually sank, nearly free from pain, with her intelligence unimpaired to the last. She died on the evening of Monday, 23d May, eleven days after being operated upon, and fifteen from the commencement of attack.

The body was examined by Dr Robertson and myself on the evening of the following day. Very little reparation had taken place in the wound. The thickened sac showed as much elasticity and gaped as much as when opened. The forefinger introduced into it could be passed with ease into the cavity of the pelvis. On opening the abdomen, the only part of the body examined, the small intestines were found moderately distended with flatus. There was inflammatory redness, but not intense, of the convolutions, which deepened towards their union with the mesentery. There was no effusion either of lymph, serum, or feculent matter. A coil of small intestine of an ashy gray colour, and which had lost its shining, smooth appearance, was found adhering to the lining of the pelvis immediately external to the obturator foramen. On one side of this adhesion the bowel was moderately distended, on the other flaccid and empty. On using very gentle traction the distended bowel gave way and a free escape of liquid fæces took place. A rent about 2 inches in length had occurred immediately above this adhesion; but the bowel having collapsed after bursting, it was found difficult to determine whether a band encircled the entire circumference of the intestine, or whether one side only of its calibre was glued to the pelvic peritoneum. Where the rent occurred the bowel was soft, as stated before, and deprived of its natural glistening appearance. A large, movable uterine fibroid which had never been heard of before was found.

I am too well aware that I have been tedious; but the infrequency as well as the profound gravity of obturator or sub-pubic hernia warrant, I think, my presenting to you the narrative I have just recited. More cases of this displacement of some of the abdominal contents have been detected after death than during life. In a recent work on surgery (Bryant), it is mentioned that Mr Birkett has been able to find recorded only 28 cases of this rare form of hernia. Of these more than a half were only discovered after death. The same authority states that only three operations have proved successful. In the case just narrated there can, I presume, be no doubt but that the pelvic adhesion was the cause of the fatal issue. This adhesion probably existed in a lesser degree previous to Miss L.'s last and fatal attack, and was likely added to during that illness. Abdominal surgery is now, owing to the labours and extended experience of Dr Thomas Keith, Mr Spencer Wells, and others, in a state as nearly as possible of perfection. We know that the dread of wounding the peritoneum and freely handling the abdominal viscera which had hold of the surgical mind five-and-twenty years ago does not now exist. It might fairly, then, be asked, Would it be proper, under such circumstances as I have just narrated, to open the abdomen, search for the obstruction, and attempt its removal? I think it would, and this view is now recognised and generally acted upon. In this instance, however, at the time when the symptoms would have justified such a proceeding, viz., twelve or thirteen days after the onset of acute strangulation, opening the abdominal cavity and handling the bowels, however gently, would almost inevitably have produced the same rent which took place when the body was being examined after death. There can be little doubt, taking into consideration the fact that such a large proportion of cases of sub-pubic hernia are only discovered after death, that many fatal instances of obstructed bowels are the result of unrecognised strangulated herniæ finding their way through the obturator foramen. The operation for the relief of this rare species of rupture is very much more difficult of performance than that practised for the external forms of this ailment usually met with. The sac and its contents lie at great depth, and almost beyond the reach of sight. This circumstance necessitates that the deep dissection be carried on with great delicacy and caution. With the aid of copper spatulæ, blunt hooks, and more skilled aid than could be commanded on this occasion, the division of the pectineus might be avoided. I think, however, the division of this muscle to a greater or less extent is advisable, as this proceeding gives more space, and, I may say, daylight, in the bottom of the deep wound. The provision made for the establishment of an artificial anus turned out to be an unnecessary precaution. The feasible explanation of the great and permanent remission of symptoms which occurred after, and certainly in consequence of, the operation would appear to be that the division of the stricture formed by the obturator ligament relieved the vascular circulation, although the obstacle to passage through the bowel, the result, probably, of inflammatory adhesion, still constituted the obstruction. It would probably have been more in accordance with surgical rule to have opened the sac before dividing the stricture, strangulation having existed for five days; but examination after death showed that no practical or vital mistake had been committed in this respect.

I would be guilty both of want of courtesy and generosity were I not here to express my obligation to Dr Robertson for the great care he bestowed upon this case, which relieved me of all the trouble of carrying out details after the performance of the operation.

ARTICLE VI.—*Clinical Observations on Puerperal Temperatures.* By A. D. LEITH NAPIER, M.D., Dunbar.

(*Read before the Edinburgh Obstetrical Society, 25th June* 1881.)

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION

THE lessons we learn daily by means of thermometry are many and multiform. The thermometer is, in everyday routine, of more importance than even the stethoscope, and will doubtless become still more valued as an aid to diagnosis than it is, as medical observation becomes more exact, or the great examiners of the profession, the public, more exacting. I make no attempt to follow the history of the clinical thermometer. Since its introduction in 1614 by Sanctorius,[1] so great alterations have been made on the instrument, and so very different significance is attached to the evidence it affords in different diseases, that the labour of tracing the gradations of opinion is greater than the present subject demands. Yet, as bearing in some measure on what follows, it is impossible to waste time by briefly referring to the large importance with which body heat was regarded by the ancients. A high temperature was held by most as synonymous with fever, and all these authorities agreed that fever consisted of a preternatural increase of the innate heat of the body. I desire to avoid the evident pedantry of dragging these worthies from their well-earned repose, and merely remind you that Palladius, Hippocrates, Galen, Aetius, Alexander, Actuarius, Cælius Aurelianus, Haly Abbas, and the Arabians generally, seem to have held much the same opinions. "The heart was the seat of the preternatural heat, and by means of the arteries arising from it this heat was diffused over the whole body and injured its actions." Some held "that fevers or increased temperatures were identical with inflammations," and we have not to go far in modern medical literature to find this doctrine of Erasistratus reproduced by some physicians, *e.g.*, the lately produced theory that pneumonia is not a primary lung affection, but the local manifestation of the febrile condition by which it is usually accompanied. In writing of the cure of "pestilential fevers," Celsus draws attention to the necessity of employing energetic measures, "especially if the fever be attended with a burning heat."

While theoretically we are all taught nowadays that the constant use of the thermometer is essential to intelligent practice, I venture to think that, except in hospital wards, unless there seem prominent indications for its use, the practice is behind the theory. For example, I was recently attending a lady who was nursed by one of the best Edinburgh monthly nurses. As is my usual custom, I used the instrument morning and evening. About the fourth day after delivery the nurse gravely asked me, "Is there anything wrong with Mrs So-and-so?" I replied, "No; why do you ask?" "Because," she said, "I see you take the temperature

[1] *Medical Thermometry*, Wunderlich, N. Syd. Soc., p. 20.

so often." I inquired, did she not learn at the Maternity to do so, and did not her teacher (one of the best) tell her to do as she saw me do? "Oh yes," she answered; "but with his private patients Dr X. never uses the thermometer *if all is going well.*" Now, if the nurse's statement was true, here was an instance of a successful and deservedly respected teacher neglecting in private practice what he enforced with his hospital patients. No wonder if we find it difficult to get nurses to work intelligently, when the foremost obstetricians may occasionally be found so Greek-like in saying what they do not carry out.

"The whole subject of body heat, its production, its dispersion, and their disturbances, call for more general attention than they have yet succeeded in attracting. The use of a clinical thermometer as a diagnostic aid is now very general, but a like interest in the *rationale* of hyperpyretic temperatures is far from being equally general. Men will use a thermometer assiduously who cannot, however, be induced to give much thought to the how, the why, and the wherefore of the pyrexia."[1]

"The investigations of Wunderlich and others have shown that by careful and repeated observations of the temperature of the body valuable information as to the nature of the disease may be obtained, and even, in some instances, by its means alone, a diagnosis may actually be arrived at."[2]

It is certain that there has been, within the last few years, an effort to differentiate between diseases and varieties of the same disease by temperature, and already not a little has been accomplished in this direction. Aitken,[3] who has based most of his observations on Wunderlich's researches, has done much to popularize this movement in England. A decidedly practical article on "Temperature as a Diagnostic and Prognostic" appeared lately in *Le Practicien*,[4] and constantly medical science is receiving similar additions.

But in text-books on midwifery little or nothing is found. Leishman[5] has not a single chart, and Playfair[6] but one, so that there is still great necessity for inquiry and research regarding the due import of temperature in the puerperal condition. The importance of thermometric observation in midwifery is not only to be measured by what we learn of how hot, how ill the patient is; but also it determines the first approach of an unwonted, unnatural, and undesirable condition. A rise of temperature is frequently the first reliable indication of evil. It is true that the test of body heat may be fallacious, but what test is not? Of the more common fallacies we will hereafter treat. The few objections which can be brought against frequent use of the thermometer in private practice may be easily disposed of. If using the instrument in the axilla, and if the physician, on entering the room, after the due examination of the index, leaves it at 85° to 90°, causes the nurse or the patient herself to place it *in situ*, and permits it to remain there five or seven minutes, there is neither indelicacy, trouble, fatigue, nor annoyance to the patient; or loss of time to the doctor, as few can put in an ordinary visit in less time. And should it be too much to expect the busy practitioner to pay a regular evening visit, it is inexpensive and trouble-saving to leave a self-registering thermometer with the patient, which will tell its own tale next day.

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[1] *Practitioner's Handbook of Treatment*, Fothergill, p. 99.
[2] *Clinical Medicine*, M'Call Anderson, p. 6.
[3] *Sci. and Pract. of Med.*
[4] 13th Jan. 1879.
[5] 2d Ed., Glasg.
[6] 2d Ed., Lond.

My present desire is to direct attention to the fact that certain special indications or interpretations can be gleaned from the use of the thermometer in the post-partum period. When we find a man wisely shaking his head at such attempts to discriminate between varieties of temperature, we must, with all charity, believe that he is either more fortunate or reckless than scientific in his practice.

I have, without the slightest other indication, been able to prognose mastitis by this means a week or ten days before the appearance of other symptoms. It may be argued that the mastitis was the result of the increased temperature under the special circumstances of the puerperal development of the gland; or, again, that such cases were septic, ending in the local development of pus. To the latter theory I would reply that this slight increase of temperature, on which I based my prognosis, was quite unlike the development of septicæmia in any of its forms. There seems a most extraordinary desire on the part of some to hide all bad recoveries under one cloak, and septicæmia appears such an ample one that the spare folds are expected to hide the rents in the garment. Nor do I here refer to weid, with its distinct and almost pathognomonic symptoms. In those mild cases of febrile action ending in mastitis, before as well as after the gland is knotted or inflamed, we may, and generally do, have some rise of heat which is not long continuous, and disappears with the local development of pus or on the exhibition of treatment. And in these cases the thermometer is of the greatest value, as most often there is neither rapidity of pulse, chill, nor rigor, no alteration of the lochia, no thirst, headache, nor languor, to warn us of anything amiss. That other varieties of bad recovery are well heralded by the respective temperatures is also true. That there is a temperature for peritonitis, metritis, pelvic cellulitis, including ovarian affections (which is, I confess, loose classification), and for septicæmia, I have formerly endeavoured to show;[1] but since the occurrence of the cases on which these statements were founded I have been working pretty assiduously at the subject, and can further elaborate my former theories.

Nothing is, perhaps, less satisfactory in medical literature than the exhibition of one particular symptom in disease, to the exclusion of others of equal or almost equal importance, and of this I am quite conscious; yet it is quite unreasonable to expect full and complete details in an ephemeral paper, and quite as much so to look for unwearied patience in the digestion of such a contribution.

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[1] *Obstet. Journ.*, xciii. p. 645.

As illustrating the benefits of precision in thermometry and the lessons to be deduced therefrom, I have to direct attention to two cases under the care of Dr John Williams in University College Hospital; and *en passant* I remark that sometimes the consideration of the heat records corrects the tendency of statements that are in the main rather general. The first case is "Rupture of Vagina into Douglas's Pouch; Peritonitis; Recovery."[1] Labour took place on 13th Nov. Before delivery the temp. was 101°. The delivery was effected by craniotomy. 16th Nov., temp. 99°·4; 17th, 100°·4. It seems to have reached 100°·6 on 20th Nov., but no other record was above 100° F. The second case, "Pregnancy complicated by Ovarian Tumour, Abortion at Fifth Month, Puerperal Fever, Ovariotomy; Recovery,"[2] is a most interesting one. Delivery on night of 14th Sept.; 16th Sept., temp. 100°·6; 17th, 104°; 18th, 106°. Do symptoms like these indicate one disease? No, say the readings, and we agree; but, again, would most of us regard the first case as one of puerperal peritonitis? I think not. To differentiate between such cases the thermometer is of very material assistance. If we regard the first quoted case as illustrative thermometrically of that form of peritonitis (?) which we have broadly named cellulitis, and that the case was a slight one, we are nearer a classification. Be this as it may, we have here two markedly different cases differently treated, and both cured. To what is the diagnosis in great measure indebted? Do not temperatures show at a glance the great dissimilarity? Yet without these some might regard both as "puerperal fever," one mild, the other severe. I have been observing the temperatures of nearly all my puerperal patients carefully for about seven years, and, without giving full details, which I avoid for economy of time, may state that the following observations are based on sufficient material to be very fairly worthy of acceptance. The deductions which I have drawn are from personal observation on a considerable number of cases.[3]

In enunciating my views I have to use various terms which require a little explanation. Early, signifies either immediately after delivery, or at latest within three days. Sudden, without warning, or with so mild precursory symptoms as to seem so. Persistent, is used in a modified sense, not signifying strictly continuous, but almost so. Gradual, signifies the step-by-step gentle incursions of the disease.

(*To be continued.*)

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[1] *Brit. Med. Jour.*, 12th Feb. 1881, p. 231.

[2] *Ibid.*, 18th December 1880, p. 937.

[3] In connexion with this paper I exhibited thirteen charts of illustrative cases, besides which I have many others, and the difficulty of selecting from these has caused me to withhold all in the meantime.

ARTICLE VII.—*Hysteria and the Larynx.* By Dr L. THAON of Nice. Translated by J. J. KIRK DUNCANSON, M.D., etc.

HYSTERIA has a marked predilection for the larynx. It shows itself under various forms, it claims special treatment. We will not notice the laryngeal symptoms such as we meet with in generalized attacks of hysteria, in hysterical spinal irritation, in hysterical chorea, etc.; we will only insist upon hysteria localized in the larynx, to the exclusion of every other part of the body, and without other accompanying hysterical manifestation.

Thus considered, laryngeal hysteria constitutes one of the most interesting chapters of localized hysteria, and it offers difficulties in diagnosis and a varied therapeutics which it behoves the specialist to be well acquainted with.

Cases of laryngeal hysteria are very frequent, almost as frequent as cases of localization of hysteria in the genital organs. The motives of this localization are unknown. Occasional causes are found in the larynx itself. Thus it may be an inflammation more or less serious, most frequently very slight; it may be a traumatism of the region; or perhaps the cause is more distant. It may be an inflammation or a tumour of the soft palate which gives rise to laryngeal hysteria; this cause may perhaps be still more distant, and seated in the genital organs, in the ovaries, in the uterus congested or displaced. We know the pathological and physiological sympathy which connects the larynx to the genital organs. This is also revealed in hysteria. Lastly, hysteria may break forth in the larynx from irritation. We have not personally seen examples of it, but undoubted cases have been recorded.

All these causes local or distant, all these causes so diverse, act through a common intermediary which connects the larynx to the excited region. This intermediary is nothing else than the brain, in which a special zone is for the moment found in a particular morbid state. The hysteria of the larynx is seen under four principal forms, which are often found united together. We must, however, disassociate them for the sake of diagnosis and rational treatment. They are *aphonia, spasm, anæsthesia, and hyperæsthesia of the larynx.*

Aphonia.—Aphonia is not the most frequent manifestation of hysteria settled in the larynx, but it is an expression of it the most evident and the most commonly admitted. It is caused by paralysis of the muscles of the larynx. The muscles most commonly seized are the vocal muscles. Nevertheless, paralysis of the posterior crico-arytenoids is not absolutely rare, and we have known a case of this kind in which a hysterical female has been twice tracheotomized. A primary symptom of hysterical paralysis is that it is frequently bilateral, or else the paralysis is one-sided, but complicated with paresis or contraction of the opposite muscle.

Thus hysterical aphony is often complete. It is, besides, a common enough occurrence, this diffusion of hysteria in organs which are impaired, and which are not symmetrical, as the ovaries.

A second symptom of hysterical aphonia is that it frequently gives a laryngoscopic image differing the one day from the other.

A third characteristic is to leave the cough intact, which even gains in intensity and breaks forth into roaring. We have even seen some cases of hysterical aphonia where the patient could sing, and some who could speak in their dreams.

Another peculiarity of this aphonia is the absence of muscular atrophy, notwithstanding a long duration of paralysis. It is still our duty to look for means of diagnosis in the manner in which this aphonia conducts itself under treatment; in fact, whether it disappears at the slightest therapeutic summons, or after it has resisted all the resources of the art, at the end of a shorter or longer period, the aphonia disappears of itself on the occasion of a moral emotion more or less active. A fact which we have often proved is the existence along with the hysterical aphonia of a patch surface of cutaneous anæsthesia on the border of the supra- and infra-hyoid regions. We have met with this symptom nearly twice in every five cases. Hysteric aphonia is cured by every method, or else it is a rebel to every form of treatment. From the simple introduction of the laryngeal mirror, which instantly causes the aphonia to disappear, to the subcutaneous injections of strychnia, all have succeeded or failed. Besides the laryngeal sound, which excites the larynx, compression of the larynx, laryngeal gymnastics, induced currents, continuous and interrupted currents, injections of strychnia, which ought to be employed, we insist more particularly upon the revulsive method, upon sinapisms, upon vesicatories applied to the region of the neck, upon the actual cautery applied at various points along the vertebral column. These means generally succeed, and they probably act by modifying this cerebral zone which holds the laryngeal trouble under its sway. Another remedy which we have at different times employed is metallotherapie and the action of magnets. Five patients suffering from hysterical aphonia, two of whom presented plaques of cutaneous anæsthesia, which we have pointed out above, have been subjected to the influence of various metals, according to the general rules. With one patient twenty-two years of age, suffering from aphonia for the third time, and during the third week of her relapse, we saw the aphonia disappear. The voice returned by the application of a necklace of six pieces of 100 francs in gold worn during the night. At the end of two days the voice disappeared again, to be brought back by the same means. At last, after three applications, the cure was complete. With this patient the anæsthesia of the neck followed the same oscillations. With the magnet we have only obtained results which are *nil* or incomplete. One hysterical patient suffering from aphonia for two years, after having been subjected for two days to three *séances* daily of the magnet, was seized with a severe spasmodic cough; at each *séance* she experienced, besides, a violent tickling in the back,—this is all that we have been able to obtain for her from the magnet. It is not unprofitable to repeat, in order not to discourage medical men, that we have seen cases of hysterical aphonia disappearing at the end of ten years. Success in these conditions belongs to the physician who knows to vary the means and to be assiduous enough in their employment.

Spasm of the Larynx.—The *hysterical laryngeal spasm* has its characteristics which distinguish it from the spasm of infancy, from the spasm from an irritation of the vagus nerve or of the recurrent, and from the spasm from the introduction of a foreign body into the larynx. This spasm is expiratory or inspiratory. The expiratory spasm is nothing else than the whimsical cough of the hysterical, a symptom common to nearly every hysteric, but a symptom the most painful. In a boy fourteen years of age we have counted as many as twenty-five coughs per minute during weeks. This child was cured by a heavy rain which overtook him during a walk, and to which he was exposed for two hours. At other times the hysterical cough is cured by the intercurrent affection which has been its primary cause. We know the fortunate consequences of the cure of uterine maladies from the hysterical cough. This hysteric cough was the cause of many errors being made before the laryngoscope had unveiled the exact state of the larynx. When it is met with in young girls associated with supplementary hæmoptysis, it gives rise to a prognosis of which the gravity is only apparent.

The laryngeal inspiratory spasm is more rarely met with in hysterics. The varieties are numerous, from a simple modification of the voice to a spasm which puts the subject of it in danger of an imminent death; we even find in medical literature fatal cases followed by an autopsy. To a very slight degree the voice is more stridulous, or else it is discordant, or as if it were broken; the respiration is a little noisy. Under these conditions the laryngoscopic examination allows us to see the glottis partially closed during inspiration. In a more aggravated degree we can hear varied sounds resembling the crowing of a cock, the barking of a dog; besides, the respiration becomes whistling. At length the spasm becomes so pronounced that the patients present a frightful spectacle, and appear threatened with immediate death. It is singular, that even in these cases the symptoms of asphyxia are not so pronounced as in spasms of other origin. Many tracheotomies have been performed in these conditions. Some of them were perhaps justifiable, but the greater number might have been avoided with more *sang froid* on the part of the doctor, and a better knowledge of the varied resources offered by therapeutics. When danger is imminent, chloroform is the most expeditious means; it unquestionably stops the spasm after a short period of inhalation. A proceeding which has succeeded several times consists in forcibly drawing out the tongue, and even in pushing the finger into the larynx. This procedure probably acts by reflex action rather than in raising the lowered and contracted epiglottis, as Chairou supposed. If we had time for reflection, we might employ revulsives upon the neck, electricity, etc. With a young girl seized with a spasm on arriving at puberty we have succeeded in stopping the spasm by the aid of ovarian compression. An experimental spasm, which we can develop in hysterical as well as in other nervous persons, is the laryngeal spasm of the somnambulist. After having produced the state of somnambulism, if we gently touch the larynx with the finger, sounds can no longer be emitted. This phenomenon is certainly due to a contraction, as with all the other muscles of the organism. It is by contraction, and not by paralysis, that we prevent somnambulists from making movements. Whatever it may be, the laryngeal spasm returns in paroxysms which are repeated every day, or at different periods, and may be prolonged for months, or even years. This spasm is associated with the third form of laryngeal hysteria with laryngeal hyperæsthesia.

Laryngeal Hyperæsthesia.—Hysterical laryngeal hyperæsthesia is very common; it is perhaps the most frequent manifestation of hysteria in the larynx. Sometimes it is diffuse, and manifests itself by various sensations—sensations of burning, tearing, pulling, going from the throat to the sternum, sensations of a foreign body. Who does not remember being called out in great haste to see a woman who had swallowed a pin, a fish-bone, etc., and who was in the greatest agony. After a conscientious examination we find that the patient has been mistaken by a false sensation, and that we ourselves have been the victim of a false alarm. But it is not always easy to convince these same subjects that it is not rare to find amongst them veritable cases of laryngeal hypochondriasis. We will read with interest an observation of Mandl, who relates the history of a patient who would affirm that, in consequence of ulceration, she had successively expelled the epiglottis and all the cartilages. In these circumstances it is in the highest degree necessary not to forget local treatment, or to leave it off to attach one's self to a general treatment more or less commonplace. Well-directed local therapeutics can cure the patients as certainly as a well-established treatment can set free from hypochondriasis those subjects attacked with catarrh of the stomach. Laryngeal hyperæsthesia, in place of being diffuse, may be localized in the form of painful points, true neuralgias, more commonly situated to the left side of the neck, and with painful foci which we exasperate by pressure, and which are, in order of frequency, the lateral borders of the thyroid cartilage, the crico-thyroid interspace, the hyo-thyroid interspace, the posterior portion of the tongue behind the lingual V. Another variety of hyperæsthesia is characterized by being afraid to speak, by *phonophobia*. The patients dread to speak aloud; they whisper. If they speak in a loud voice they are immediately seized with very acute pains. The laryngoscopic examination in these cases of laryngeal hyperæsthesia presents three well-defined advantages. It allows us to assure ourselves that no important lesion exists in the larynx, and to give the formal assurance of it to the patient; it gives to the patient a confidence which is almost half of the cure; it permits the introduction of topical remedies, carried out in a precise manner, without groping in the dark, without unnecessary irritation. Putting aside some exceptional cases, the laryngoscopic examination is easier than we suppose, and sometimes even very easy, by reason of a certain degree of analgesia. The local therapeutics consist of calming the exaggerated sensibility of the larynx with the aid of topical remedies applied to the mucous membrane, such as the glycerine of morphia, or, better, the application of morphia in the form of powder. For the neuralgic form, hypodermic injections ought to have the preference. We will carefully avoid the abuse of the injections by those patients afflicted with a laryngeal neurosis. Some of them have exhibited remarkable examples of these abuses. The revulsive method also acts with incontestable efficacy; we often succeed with little blisters applied to the sides of the neck. We sometimes stop the spasms, which are accompanied by a slight catarrhal redness of the mucous membrane, by the help of an intra-laryngeal cauterization with a solution of the nitrate of silver.

Laryngeal Anæsthesia.—This anæsthesia, which is the fourth form of laryngeal hysteria, is observed less frequently than is affirmed by some authors. Chairou, in a memoir read before the Academy of Medicine in 1870, maintained that the constant pathognomonic sign of hysteria was anæsthesia of the epiglottis. Since then, James Sawyer has insisted upon the frequency of this symptom. The result of our inquiry on this subject is, that in only one-sixth of hysteric patients we have met with more or less complete anæsthesia of the epiglottis. It is the epiglottis which is most frequently attacked by anæsthesia, and frequently to the exclusion of every other part. Anæsthesia may have completely mastered the whole of the larynx and be absolute. Generally it is bilateral, and is not limited to any well-defined nervous territory. This characteristic sometimes sufficiently distinguishes it from other anæsthesias, which are as extensive as one of the areas of one of the superior laryngeal nerves, such as diphtheritic anæsthesia. Another important and special characteristic of this anæsthesia is that it is frequently associated with a cutaneous patch of anæsthesia on the front of the neck, a peculiarity already noticed with reference to hysteric aphonia. The simple introduction of the mirror is sufficient to cause many of these anæsthesias

to disappear. In the more rebellious cases, touching with the sound, the application of an intermittent current, one or several paintings with the nitrate of silver, suffice to set the patients free. Metallotherapie, which was formerly indicated in these cases, has equally succeeded with us under various circumstances. This local manifestation of hysteria would, then, be as little troublesome as easy to combat, if it were not combined with other forms. It is, in fact, chiefly with complex forms, which we have only in a small degree artificially disassociated, that we have to do. In laryngeal hysteria the four forms, hyperæsthesia, anæsthesia, paralysis, and muscular spasm are mingled, combined, and succeed one another. It is with this as in others; the same takes place in other organs of the body. It is this which one sees in other examples of visceral hysteria, as in the genital apparatus; cramps, neuralgic pains, contractions, sensations of every kind, are together mixed up to characterize localized hysteria. It is in this coincidence of diverse forms that we find new elements for the diagnosis of laryngeal hysteria, as if hyperæsthesia, or paralysis, or spasm were not of themselves characteristic enough.

In conclusion, the diagnosis of laryngeal hysteria may almost always be made at the very first without taking into consideration the train of other symptoms of hysteria, which are very often wanting. This manifestation of hysteria can very frequently be advantageously modified by a well-ordered local treatment, which in this form has a greater importance than the general treatment applied to nervous people.

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Article VIII.—*Report of Fourteen Cases of Completed Ovariotomy.*

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(*Read before the Obstetrical Society of Edinburgh, 13th July* 1881.)

The operation of ovariotomy not long ago was looked upon as an unwarrantable proceeding; nor need it be wondered at when we know the terrible feelings of dread with which surgeons regarded interference with the peritonæum, and the extremely exaggerated fears they had of peritonitis. But within the last twenty years the labours of Mr Spencer Wells, Dr Thomas Keith, etc., in this country, and of a large array of ovariotomists in Europe and America, have established the fact that this operation is not only a warrantable and a successful one, but an operation that is quite within the power of any one to perform who is willing to operate with ordinary care, and who possesses a fair amount of surgical dexterity. To bring the subject to this issue cost the pioneers of ovariotomy much trouble, toil, and patience. They had to face the most determined opposition from a section of the profession whose conservatism is always found laid in the scale over against progress. It is perhaps better that it should be, as the temptations to brilliant display of the surgical art are so great that, were it not that this feeling opposes it, lives might frequently be unnecessarily sacrificed at the shrine of surgical glory.

One of the results of this state of our knowledge respecting ovariotomy is that very many more persons are attempting it, and the operation is being performed all over the country with astonishing success. I confess myself to be one of those people who have recently tried my hands at this operation, and the record of my first fourteen cases is here presented to the Society in the hope that it may interest them. As a gynæcological physician is constantly brought face to face with the diagnosis of ovarian tumours, he is naturally tempted to operate on such as occasion offers. I am one of those who think it is necessary for a medical man concerned with the diagnosis of those tumours to himself operate, or at least to operate occasionally, inasmuch as his powers of diagnosis, tested in this way by himself, are sharpened and improved in a way that it is difficult to bring about if he is not allowed to operate. Consequently, I regard the rule adopted in some of the London hospitals of separating the diagnosis from the treatment of such tumours, assigning the one to the gynæcological physician and the other to the pure surgeon, as on the whole a mistaken policy.

The educated touch of the gynæcologist, and the methods of examination peculiar to him, fits him for deciding many points concerning these tumours which the surgeon is unable to undertake, and must accept on his evidence. This places the gynæcologist who operates in a more favourable position than the surgeon, because it is one of fuller and more accurate knowledge of the subject in hand. It may be said that the greater dexterity of the pure surgeon, and his fuller resources in case of emergency, more than make up for such deficiency in the matter of diagnosis. This I doubt. In surgery the overwhelming consideration is to know what is to be done. The manner how—as was so strongly pointed out from time to time by the late Mr Syme—is always of secondary importance, and usually within the reach of every careful, well-instructed medical man.

The practice of America, the motherland of ovariotomy, as well as that of Germany and France, is to assign this operation especially to the members of our branch of the profession. Leaving this apology for my action, I now proceed to briefly record the cases.

CASE I.—My first case was that of Mrs A., æt. 64, widow, 153 Rose Street. This patient was admitted into Ward XVI., old Royal Infirmary, on 31st July 1878. She was found to suffer from an abdominal tumour of considerable size, and from severe abdominal pain to the right side of the umbilicus.

This patient was tapped by me on the 1st of August, and 160 oz. of a dark brown glairy fluid evacuated. This fluid was highly albuminous, had a specific gravity of 1035, and showed under the microscope some blood corpuscles and a large number of rounded corpuscles slightly larger than white blood corpuscles, with some granular or shiny points in them. There was also much detritus and large granular cells in the fluid.

The diagnosis in this case was put beyond a doubt by the result of the tapping.

The patient returned home, and as the fluid slowly reaccumulated it soon became necessary to relieve the patient permanently. Dr Thomas Keith some time before had published his surprising results with the aid of antiseptics, and, emboldened by his example, I resolved to operate in this case. The operation was performed on the 6th of December 1878. I was assisted by Dr A. Montgomerie Bell, Dr Playfair, Dr Macgibbon, and Dr Jardine. The strictest antiseptic precautions were employed, with large steam spray. After the patient was thoroughly anæsthetized with a mixture consisting of three parts of absolute ether and one of chloroform, an incision of 3–4 inches long was made in the linea alba, terminating about an inch above the pubes. The walls of the abdomen were very thin, and the peritonæum quickly reached. The tumour was adherent to the anterior abdominal wall to a considerable extent. These adhesions were partly torn asunder, partly cut, and tied. There were no pelvic adhesions.

The tumour was to a great extent monolocular, and its contents ran through the trocar. The pedicle, which was connected with the right ovary, was treated with the cautery. After slacking the clamp a large vessel bled in the right border of the stump. This was secured by passing a silver wire round it, tying it tight, and cutting it short.

The abdomen was thoroughly cleaned out with sponges, the wound brought together by deep stitches of carbolized silk and superficial stitches of catgut, except at lower angle, where a glass drainage-tube was inserted. The wound was dressed, the patient put to rest, a brandy enema administered, and hot bottles applied around her. The operation lasted nearly two hours, and the tumour with contents weighed 15 lbs. She made an excellent recovery. The glass tube was taken out on the third day. The wound healed throughout by first intention, except where the tube was. The stitches were removed on the 8th day. The temperature never rose over 101°, and that only on one or two occasions, although the patient suffered from a nasty bronchial cough which had been present previously, but which was aggravated by the exposure during the operation. She was fed entirely on small quantities of milk and hot water, as recommended by Dr Keith, for the first week. The bowels moved spontaneously on the 8th day, and the patient was able to be up and about between the third and fourth week.

CASE II.—My second case was that of Miss H., æt. 44, unmarried, from Galashiels, admitted into Ward XVI., old Royal Infirmary, on 17th January 1879, on the recommendation of Dr Murray, Galashiels. This patient had always enjoyed good health, except for the discomfort occasioned her by an abdominal swelling, which had distressed her for three years past. The patient had had one child fifteen years previously. On admission her abdomen was found to be distended to about the size of a seven months' pregnancy by an exceedingly tense, elastic tumour. The percussion of the front of abdomen over the tumour elicited a dull note; the flanks a resonant note, and change of the patient's position did not alter the areas of dulness. Friction could be felt and heard over certain portions of the tumour, which did not appear to be adherent to the abdominal parietes. Fluctuation and fluid thrill were both perceptible in the tumour. The surface of the tumour was tolerably uniform. A small movable uterus was to be felt in the pelvis, displaced forward towards the left, the tumour filling up the inlet into the pelvis. There was no tenderness on pressure over any part of the tumour. An aspirator trocar was introduced, and 88 ounces of chocolate-brown-coloured fluid was extracted. This, on microscopic examination by Dr Foulis, was declared to contain some altered corpuscles, numerous large and small granule cells of undoubtedly ovarian origin. The diagnosis being now clear, on the 25th of January 1879 I proceeded to operate.

The tumour was found to be multilocular, so that several trocars had to be employed before the tumour could be sufficiently lessened in size as to get through the abdominal opening. There were no adhesions. The pedicle, a long one, was attached to right broad ligament, and was treated with cautery, but two vessels which bled in its surface had to be secured by silver wire. The abdominal cavity was then well sponged out, and the pedicle dropped inside. A glass drainage-tube was put in the lower angle of the wound, and the abdominal wound brought together in the usual manner, the abdomen well bandaged, and the patient put to rest. A brandy enema was administered. The after-treatment of this patient was the same as in Case I. The drainage-tube was taken out on the second day, after which the dressing was not disturbed for three days. On the eighth day the abdominal wound was found entirely closed. The deep sutures were now removed, the superficial catgut sutures having already disappeared of themselves. The highest temperature in this patient's case was 101°·8. The patient was dismissed cured on the 20th February—that is, twenty-six days after the operation.

CASE III.—Mrs H., from Dundee, æt. 53, mother of eleven children, admitted into Ward XVI., old Royal Infirmary, on 17th January 1879. This patient was sent by Dr Sinclair of Dundee. The patient stated that she ceased to menstruate about two years previously. About six months before she came to Hospital she observed some red discharge from the vagina, which recurred every fortnight, and at the same time she observed a swelling in the abdomen at its lower part. For this she applied for relief to several medical men in Dundee, and finally fell under the care of Dr Sinclair, who sent her to me. She was very much exhausted indeed by chronic bronchitis, indigestion, and pain in the abdomen. The abdomen was distended by a rounded tumour that gave the appearance of a full time pregnancy. On manipulation there was pretty well marked friction fremitus felt over the whole of the tumour. Measurement round the umbilicus was 34 inches. The whole surface of the tumour gave a dull percussion note, except at the sides posteriorly, where resonance is well marked—more at left than right side. Fluctuation and fluid thrill felt in the tumour. On the left side there is a feeling of solidity about the tumour.

Per Vaginam.—The whole of the inlet into the pelvis is occupied by a softish mass, except on the right side, where a hardish mass, apparently the displaced fundus uteri, is felt. This opinion is confirmed on passing the sound, as it enters obliquely towards the right and upwards. The sound passes three inches.

On 19th January the cyst was aspirated, and 60 ounces of fluid of a palish brown colour removed by the aspirator. The main cyst being emptied revealed the presence of several hard bodies, apparently smaller cysts, composing the tumour. Dr Foulis examined the fluid, and found it to contain fibrin, and also large and small granule cells and a few blood corpuscles. He declared the fluid to be unmistakably ovarian in origin, and to indicate a certain amount of inflammatory action in the tumour, but not malignancy. The tapping gave some relief to the breathing, and the temperature, which had been from 101° to normal, began to range from 99°·4 to normal. The patient kept very feeble, however, and the cyst rapidly refilled. After the hyposulphate of soda had been administered to the patient for several days in five-grain doses, the operation of ovariotomy was performed by me on 22d February under anæsthesia and the strictest Listerian precautions. On opening into the peritonæum it was found much congested, as also the wall of the tumour, which was almost gangrenous and extremely brittle.

The tumour proved to be composed of two large and a number of smaller cysts with solid material. There were no adhesions. The pedicle was very short, scarcely permitting the application of the cautery clamp. The pedicle was slowly cauterized, but two vessels had to be tied with silver wire on removal of the clamp. The abdomen was carefully sponged out, and the pedicle dropped.

The wound in abdomen was treated as usual. The solid matter of the tumour weighed 4 lbs. and the fluid 250 ounces, making in all 19 lbs. 10 ounces. It was connected with left broad ligament. The after treatment was the same as in the other cases. The patient made a fairly good recovery. The temperature never was over 102°, and she was able to return to Dundee in the fifth week after the operation.

I was sorry to learn, by a note from Dr Sinclair, that four months after the operation this patient died with symptoms indicative of malignant disease in the region of the sigmoid flexure. As she completely recovered from the operation, and as Dr Sinclair, in his note to me, distinctly states that he was perfectly certain that the cause of death had no relation to the operation, which was in all respects satisfactory, I consider myself perfectly warranted in including this patient among my list of recoveries.

CASE IV.—Mrs B., æt. 35, married, was admitted into Ward XVI., old Royal Infirmary, on 13th July 1878, complaining of severe pain in the right lumbar region, with great swelling, due to ascites. The abdomen was punctured, and 20 pints of a clear straw-coloured fluid removed. After being tapped it was found that there was a hard movable tumour about the size of a child's head, which, however, was situated high up, close to the liver, on the right. The uterus also was found to be enlarged. The left ovary was found healthy. On the 20th of July the patient aborted, after which she was very ill for a few days, but ultimately recovered, and returned home on 22d August with instructions to report herself before long. At this period I was not sure what was the nature of the rounded abdominal tumour.

On 22d April 1879 Mrs B. again applied for admission. She was very much exhausted. In consequence of the enormous amount of abdominal distention, there was marked prolapse of the posterior wall of bladder. The uterus was displaced downwards and towards the right, the inlet into the pelvis being occupied by a large, semi-elastic, resistant mass. The abdomen was enormously distended. There was easily made out a very large tumour composed of two large cysts, an upper and a lower, connected together with solid matter. There was also a considerable amount of ascitic fluid present. Examination per rectum showed that the left ovary was healthy, but that the tumour was connected with the right broad ligament.

On 24th April the cyst was aspirated, and 170 ounces of a sticky fluid removed. This fluid, on being submitted to examination by Dr Foulis, was declared by him to be ovarian in origin.

On 9th May 1879 the patient was subjected to the operation of ovariotomy, ether mixed with chloroform being used as the anæsthetizing agents; strict Listerian precautions. There was a considerable amount of ascitic fluid. As previously made out, it was found that the tumour consisted of three parts—two large cysts and an intermediate solid portion composed of small cysts with glairy thick contents: some contained purulent stuff. There were extensive adhesions to the mesentery. The lower cyst was first tapped and emptied. The middle portion would not allow the tumour to be drawn through the original incision, and it had to be extended upwards for about 1½ inch. By traction upon the tumour the upper cyst was now got sufficiently depressed that the large trocar could penetrate it, and its contents were run off. The mesenteric adhesions were tied in two places by catgut ligatures, and the intermediate portion divided by scissors. A large number of ligatures were needed. The upper cyst was found to be inflamed, and its walls soft and friable. The pedicle was transfixed and tied with No. 4 Chinese silk, care being taken to link the sutures before tying them, and to carry one of the sutures round the entire stump after the mass had been ligatured in two halves. About half an inch of the pedicle was left beyond the ligature. There was a good deal of internal oozing. The peritonæum was carefully sponged out, and finally the wound was closed with eleven deep and several superficial sutures. A glass drainage-tube was put into the lower angle of the wound, and antiseptic dressing applied. The patient was much exhausted after operation, but quickly rallied. There was a good deal of oozing in the course of the evening. For this Dr Playfair injected ergotin subcutaneously. The fluid and solid constituents of the tumour together weighed 43½ lbs.

At 10 A.M. on 10th the dressing was changed, when it was found the bleeding had quite stopped. The abdomen was quite flat and discharge sweet. The glass tube was removed. This patient went on favourably for a few days, but unfortunately an abscess formed in the peritonæum, which delayed her recovery. This, however, healed completely under the use of a drainage-tube and disinfectant washing, and the patient was getting on well and was about to leave the Infirmary when, on the 6th of July, she began to vomit, and this was followed by unmistakable symptoms of obstruction.

On 13th July Mr Joseph Bell opened the abdomen in the hope of reaching the obstruction; but coming upon thick masses of very greatly indurated tissue, in which the intestines were enveloped, he desisted. The patient lingered on till the 18th of July, when she died.

Dr Hamilton made a post-mortem examination on 18th, of which the following is a brief abstract:—Hard nodular mass felt in umbilical region. On opening abdomen a cavity is found to underlie the wound (made by Mr Bell), formed of adhesions of mesentery and the remains of the pedicle to the abdominal wall. Cavity, somewhat triangular in shape, measured four inches from above downwards, and three inches at upper part. It was completely shut off from abdominal cavity by surrounding adhesions. Loops of ilium were in great part bound down to posterior aspect of pedicle by means of semi-organized adhesions. A considerable portion of small intestine lay between spine and pedicle, the whole being firmly bound down to the lumbar portion of the spine by firm bands. There was considerable general peritonitis, apparently of some standing, with small somewhat flat nodules resembling tubercles in their gelatinous consistence; left ovary and uterus natural; some perihepatitis of old standing.

Although this patient recovered from the operation tolerably, though slowly, and, had it not been for the extremely weak state in which she was in before the operation, and the fact that she had a miserable home to go to, might have been discharged some time before she was seized with her final illness, yet, as she died two and a half months after operation, I was quite prepared to regard her case as a death from the operation, until, when calling upon Dr Hamilton very lately regarding the ligature and pedicle, I was informed by him that Mrs B. had died of malignant peritonitis. His report to me on the examination of the pedicle I herewith include. It is certain evidence as to the cause of death, and is also an important contribution to our knowledge in regard to the changes undergone by the silk ligatures, and an important addition to the observations of Alban Doran[1] on that subject. It proves that we need have no fear regarding the absorbability of silk ligatures.

"*The Pedicle.*—Examination in recent condition showed that the indurated part behind the pedicle was decidedly cancerous. There was a hard stroma containing depôts of epithelial cells, most of them being of a flat character. The cancer appeared in the recent examination to arise from the intestine. The pedicle and portions of the tumour were carefully prepared for further examination.

"Examination, after being specially prepared, fully confirmed the idea of its being cancerous. There was a very dense stroma, with, in some places, a tendency to the formation of epithelial cell-nests. Large vacuoles were seen in some of the cells. On more careful examination the cells appeared mostly to be of a large spheroidal type. In some parts they had a cubical shape. They were all highly nucleated, and in many cases contained vacuoles.

"The *ligature* could be seen as a distinct fibrous cord surrounding the pedicle. Sections of portions of this were teazed out with needles, and did not show anything more than a little fibrous tissue. Transverse sections were then made of it, and carefully examined. The silk seemed all to have disappeared, and its place to be taken by a quantity of fibrous tissue containing numerous bloodvessels. Connective tissue nuclei were seen lying on the bundles. The fibrous tissue which had resulted had a circumscribed border, and in bulk it appeared to be nearly equal to the ligature itself. The tissues around seemed comparatively healthy, there being little of the cancerous infiltration at this part."

CASE V.—Mrs H., married, æt. 59, from Falkirk, admitted to Ward XVI., old Royal Infirmary, on 5th of April 1879, complaining of much distention of the abdomen.

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[1] *Bartholomew Hospital Reports*, vol. xiii. p. 195, and xiv. p. 113.

The patient has had five children, who are all alive and in good health. She herself has always enjoyed good health, except that an attack of inflammation of the eyes twenty-five years ago deprived her of her sight. About the beginning of last year (1878) she began to experience a sharp shooting pain occasionally in the region of the nipple, for which she was sent into the surgical wards under Professor Annandale, who amputated her right breast. The patient remained in the hospital for about six weeks. She thinks she noticed the abdominal swelling three years ago. It did not grow fast. Of late, however, the distention and pain in the abdomen had been so great that she was compelled to return to hospital.

Condition on Admission.—Abdomen largely distended, and rather unequally so, its surface being specially lobulated. Percussion note is dull over the entire abdomen, except at the flanks low down on each side, and between the upper border of the tumour and the lower end of the sternum. The tumour projects laterally so as to overhang the lumbar region. Circumference of abdomen at its widest part immediately below the umbilicus was 46 inches; from pubes to umbilicus, 10 inches; from right anterior superior spine of the ilium to umbilicus, 11 inches, and from the left, 12 inches. The tumour is partially movable in the abdomen, and rises and falls with respiration. Fluctuation and fluid impact thrill can clearly be made out in a considerable portion of the right side of the tumour; but on the left the tumour appears to be semi-solid. There is loud abdominal friction audible on auscultating the right side of the tumour.

P. V.—The uterus was high placed and pushed towards the left. It was movable, short, abnormally firm, and long for the age of the patient. The sound passed 4 inches into the uterus. Only diffuse resistance was felt at the inlet of the pelvis.

On 15th April an aspirator needle was introduced, and 234 ounces of a darkish olive-coloured fluid obtained, of spec. grav. 1050. It coagulated readily on heat. The result of aspiration was to show that the tumour was composed of a large cyst occupying its right and upper parts, whilst its lower part was made up of a multitude of smaller cysts that with their sticky contents appeared nearly solid. Microscopically the cyst contained many granule cells, some blood and cholesterine corpuscles.

On 25th May the cyst had become again filled, and 290 ounces of a thick fluid were withdrawn. There were many cells in this fluid which looked like pus; but on subjecting the fluid to Dr Foulis he said they were not really so, but ovarian cells.

On the 2d June the patient, whose temperature had been standing at 100° or over for some time, suddenly fell into a state of collapse, the temperature dropping to 97°·2. From this condition she was with difficulty rallied by brandy and heat. Feeling that, if an operation was to be performed, the weak state of the patient could not brook delay, I resolved to operate on the 3d June. Accordingly the operation was performed in the usual manner. There proved to be only one slight adhesion to the great omentum, and it readily yielded when pulled upon slightly.

The tumour, as we had reason to know already, was composed of one large and a multitude of small cysts, the latter forming the lower part of the tumour. In consequence of its solidity, this part of the tumour could not be removed until the incision was extended as high as the umbilicus. The pedicle was of great length, not specially broad, and connected with the right broad ligament. It was transfixed and tied with No. 4 Chinese silk ligatures. There was no bleeding during the operation, and no escape of fluid into the peritoneal cavity. Having made certain that there was no oozing from the pedicle, it was dropped into the abdomen, the abdominal wound closed, and the antiseptic dressing applied. No drainage-tube was used. The cervix and contents weighed 19 lbs. The patient really never properly rallied from the operation. She died on the morning of the third day. The temperature rose from 98°·8 to 100° until about twelve hours before death, when it gradually rose to 103°. The radial pulse was nearly imperceptible ever after the operation, notwithstanding the free use of brandy, and it continued so till death. Its rate averaged 114. There was no vomiting, no abdominal distention, and very little pain. The patient also passed wind on the second day. Indeed, the operation promised to be very successful, and only appeared to fail on account of the extreme condition of weakness into which the patient had fallen before it. No post-mortem examination was allowed.

CASE VI.—J. B., æt. 20, unmarried, domestic servant, admitted to Ward XVI., Royal Infirmary, on 24th January 1879, complaining of pain in the abdomen, near the left groin, of a semi-radiating character. Her menstruation had been regular, and she suffered from occasional dysuria.

Condition on Admission.—Patient fairly well nourished, but flushed and anxious-looking. Temperature 101°, and pulse 120, feeble. Soft systolic murmur at base of heart (hæmic ?). Abdomen considerably distended, measuring 35 inches round the umbilicus. The distention was very uniform in the abdomen, but the tumour was seen to project more towards the right than towards the left. Measurement round the umbilicus, 36 inches; from symphysis pubis to umbilicus, 7 inches; from umbilicus to ensiform cartilage, 5¾ inches; from right anterior superior spine of ilium to the umbilicus, 7½ inches, and from left 8 inches. Percussion laterally in both lumbar regions is resonant. Fluctuation and fluid impact thrill were manifest in the tumour. Some tenderness felt on manipulating the abdomen. The surface of the tumour was uniform, and no friction could be felt, but is heard loudly on auscultating the abdomen.

P. V.—The uterus was found normal, only pushed down towards left; sound entered 2½ inches. No part of the tumour projected into the pelvis, although its rounded outline could be felt on depressing the tumour by abdominal pressure towards the examining finger. Warm fomentations and poultices were applied over the abdomen, and two grains of quinine ordered thrice daily. By this treatment and the rest and quiet in hospital the patient's febrile symptoms and abdominal pain disappeared; but the abdomen continued to enlarge. On February 10th the tumour was aspirated, and 214 ounces of a dark greenish colour drawn off. Its specific gravity was 1015; it coagulated on heating and on addition of nitric acid. Microscopically it exhibited a few granule corpuscles and altered blood corpuscles. After the tapping the tumour completely collapsed, and it was with difficulty that we could detect its existence at the lower part of the abdomen over the pelvic inlet on the left.

By the 30th March it had become considerably refilled; but as it was giving no inconvenience the patient was sent home, and asked to report herself in six weeks. She came back on the 19th of May, and was sent home again for another month.

She finally returned for the operation on the 20th of June. The measurements then were essentially the same as on admission. The tumour had clearly developed more towards the left than towards the right since it was tapped. Free fluctuation was to be made out all over its surface. The tumour moved up and down with respiration, and appeared free from attachment to the abdominal parietes. The upper edge of the tumour was within an inch of the ensiform cartilage. Resonance was clearly marked in the left groin, much less clearly so on the right.

The ordinary operation for ovariotomy was performed on 27th June under the strictest Listerian precautions. The abdominal walls were very thick, so that more than usual bleeding occurred in making the abdominal incision.

The tumour was found to be attached to the right broad ligament. It was excessively tense, and its walls very thin. The left Fallopian tube and part of the broad ligament lay on its anterior surface. There were no adhesions. The tumour was tapped, and proved to be almost unilocular. The pedicle was thin, and was secured by transfixion with a ligature of No. 3 Chinese silk. On examining the right ovary an elastic tumour of dark colour, about the size of a hen's egg, was found in it. Believing this to be a young cyst, I ligatured its attachment to the broad ligament, using No. 4 Chinese silk, and removed the ovary. Subsequent examination of this ovary, however, proved that I acted under a misapprehension. The elastic dark mass was a huge extravasation of blood into the tissue of the ovary that would appear to have taken place with the escape of an ovum in connexion with the immediately preceding menstruation. The patient had menstruated the week before the operation. The pedicles were both dropped into the peritonæum, and the subsequent treatment conducted in the usual manner. A glass drainage-tube was used. The tumour with its contents weighed 9 lbs. The patient made an uninterruptedly good recovery. The drainage-tube was taken out the third day after the operation. The temperature was never over 100°, and after the third day ranged from 98°·4 in the morning to 99° at night. The patient returned home on 19th July, being three weeks and a day after the operation.

(To be continued.)

Part Second.

REVIEWS.

Manual of the Principles and Practice of Operative Surgery. By STEPHEN SMITH, A.M., M.D., Surgeon to Bellevue and St Vincent Hospital, New York. Pp. 690. 733 Wood Engravings. London: Sampson Low & Co.: 1881.

THIS work is an enlarged and extended form of a previous work, entitled *A Handbook of Surgical Operations*, by the same author, and in its enlarged condition exhibits many of the faults which such a change in aim necessarily implies. If it is intended as a system of practical surgery, it is very deficient; if of operative surgery, it is redundant. In fact, we see no niche for this work to fill. No student would go to it to read for an examination, for it does not tell all that he needs; the practitioner wishing to know what operation to select in a given case would not find the needed instruction; and the expert wishing to refresh his memory with full and exact details of a given operation would find that the exactness and detail he needs are absent. The book aims at being encyclopædic, and succeeds in being inaccurate.

The small details as to bandages, splints, and trusses, the plates out of an instrument-maker's catalogue, are preceded by curious chapters, each entitled, like homilies, The Obligation, The Examination, The Preparation, The Hæmorrhage, down to The Repair and The Cicatrization. As might be expected in such a melange, the pathology is old-fashioned and unscientific, and, selected apparently at random from many authorities in different ages and schools, reads like a cookery-book. The great fault is, however, the absolute want of selection and discrimination between the operations which, being often performed, need careful description, and those which are mere curiosities of history: all receive the same somewhat dry and scrappy description. The borrowed diagrams and methods are, however, scrupulously acknowledged.

Annotazioni di Chirurgie Ortomorfica. Per Dottori G. ALBERTINI e P. PANZERI, dell' Ospedale Maggiore di Milano. Milano: 1881.

THIS is a very ably written and profusely illustrated pamphlet on the subject of the treatment of limbs deformed by rachitis, which has of late excited so much attention.

The authors give a very full account of the various operative measures devised for this end from the days of Rhea Barton down to the present date, and they contrast the various methods most in vogue, describing those of Ogston, Annandale, Reeves, Macewen, and Chiene. They also contrast with these various modes of forcible straightening without cutting, under the general head of osteoclasia.

Their own experience is on 61 patients, on which number 86 operations were performed: 16 of these were osteotomies and 70 cases of osteoclasia or forcible correction of deformity. Four cases of forcible correction died of different forms of throat affection, and one osteotomy by Chiene's method died of pyæmia. Thirteen cases are figured, roughly enough, before and after the operation—one with the curious result that an unmistakable boy is changed into a girl ! ! !

The pamphlet, "writ in choice Italian," gives evidence of careful work and intelligent consideration of each case, with a knowledge (too rarely manifested in the Latin races) of the work already done by others. The woodcuts, though very rough and coarse, seem to be accurately taken from photographs. The mortality is sadly large, and points at a most unsatisfactory condition of the drainage and surroundings of the hospital in which the operations were performed.

Photographic Illustrations of Skin Diseases. By GEORGE HENRY FOX, A.M., M.D., Clinical Professor of Dermatology, Starling Medical College, Columbus, O., etc. New York: E. B. Treat. London: J. & A. Churchill. Parts 9, 10, 11, 12. 1881.

THERE were in the Museum of the International Medical Congress a number of remarkable photographs illustrative of different types of face. The type was obtained by combining in some ingenious way pictures of many faces, all of which bore a certain resemblance.

When one compared each of these representations with the type, the differences and resemblances became at once apparent; each feature could be found in the type, somewhat mellowed, however, by the combination. Now, something of this, it seems to us, may in time be done for skin diseases by aptly uniting in one the salient characters of many examples of the same disorder. We may thus, by an application of induction, obtain a type from which variations, which would be easily grasped, would be admissible within certain limits. Dr Fox has acted in some degree on this plan. He has accumulated, partly from his own practice, in part also through the kind co-operation of friends, a large collection of photographs of skin diseases. From these he has selected the most representative, and has reproduced them by the permanent autotype process, has had each skilfully tinted, and has published them, with suitable letterpress, in this Atlas, of which the four final parts are now before us. A special feature in it is, that while it illustrates the more common skin affections, it also embraces many which are of less frequent occurrence, and, from their rarity, are more liable, when encountered, to be mistaken. There are some excellent photographs of the parasitic diseases—kerion, which Dr Fox is careful in pointing out does not always result from the presence of the trichophyton tonsurans, phtheiriasis, and scabies, and what he terms porrigo e pediculosis. This latter is the same as impetigo contagiosa. Until dermatologists will agree on a common nomenclature, and stick to it, confusion as regards names will continually arise. If we are to retain the old name porrigo at all, perhaps no other disease is better designated by it than this; and all connexion with eczema is disowned if we reject the term impetigo. The plates of the erythemata are also admirable. Three varieties are shown, erythema multiforme, circinatum, and exfoliativum. This latter, however, is more than an erythema; it is a dermatitis, and general or local exfoliative dermatitis is much the better name. The accounts given of all these cases are particularly worth studying. Two singular examples of herpes facialis and of hydroa bullosum are well figured. Purpura simplex, lepra maculosa, molluscum, cornua cutanea, and alopecia areata are all faithfully depicted, their finer features being well brought out by using a lens. The two last plates are devoted to morphœa and its congener scleroderma, and to a remarkable example of sarcoma pigmentosum. The Atlas is published in England by Messrs Churchill, at a very moderate price; and to the graduate commencing practice, as well as to the veteran, its value as a trustworthy work of reference can scarcely be overestimated.

Rocky Mountain Health-Resorts: an Analytical Study of High Altitudes in Relation to the Arrest of Chronic Pulmonary Disease. By CHARLES DENISON, A.M., M.D. Second Edition. Boston: 1881.

IT is always awkward when an author states a case clearly leading to his own advantage. So sure is he of being suspected of exaggeration, that it would almost seem an act of prudence to exaggerate, in order to provide against the unavoidable depreciation, just as in some shops the goods are rated at higher prices in order that discount should be allowed. Hence, when Dr Denison of Denver, Colorado, states for the consumptive invalid the question, Where can I best find relief? we are as sure that the invalid is to be led by a chain of reasoning up the Rocky Mountains, as that the hero of a novel is in the end to be gifted with the hand of the most beautiful and winning of the ladies, in spite of all preliminary appearances to the contrary. Nevertheless it is not likely that any one who disapproved of high altitudes as health-resorts should write a book on the subject, and we are well disposed to turn our hopes to the hills as a place of refuge, for in truth we have no great faith in the curative virtues of the different places where consumptives are generally sent. It is more than twenty years since we have heard of the beneficial effects of high elevations upon phthisis, and there appears no doubt that this disease becomes very rare when we arrive at a certain height above the sea.

Consumption is very common in the United States. Dr Denison tells us that it is the cause of death in 14 per cent. of the actual mortality, and in the New England States it is as high as 20 per cent. In the wide extent of North America there are many places which promise benefit to those afflicted with pulmonary diseases. We have all heard of the improvement following on the dry cold of Minnesota, where the elevation is about 1200 feet above the sea-level. At a lower height Dr Denison enumerates "the resorts of moist and sedative Florida; Aiken, South Carolina, with its dry, bracing atmosphere and sandy soil; the balsamic region among the pines in Southern Georgia; the dry and alkaline regions of south-western Texas, in the vicinity of San Antonio; and the exceedingly equable and mild Pacific coast; San Diego, Santa Barbara, and San José, in California, which, by reason of the great humidity of the atmosphere, are much like the warm, moist climates of the Mediterranean basin. The favoured low resorts in the United States might perhaps be better chosen, climatically speaking; the attractions, however, have thus far been where the comforts of life were to be found."

Dr Denison tells us of sixteen consumptives seeking benefit from the equable temperature of the Mammoth Cave of Kentucky.

This miserable experiment was, of course, a failure, five dying within a short time, and the others being injured in health. In the New World there are many more convenient places of residence at a high elevation than in the Old. The valley of Anahuac, which holds the city of Mexico, is from 6000 to 8000 feet above the level of the sea, and in South and Central America there are many towns and thickly-peopled plateaus from 6000 to 13,000 feet high. Among these may be enumerated La Paz (13,500 feet), Potosi (13,300 feet), Cuzko (11,380 feet), Ecuador (9540 feet), Bogota (8650 feet).

In the middle of the United States, Colorado, which is larger than the whole of Great Britain, has an average elevation of more than 6000 feet above the sea-level. From this plateau rise here and there the lofty peaks of the Rocky Mountains, many of which are over 14,000 feet in height. These hills enclose many elevated valleys or parks, which are believed to have once been beds of large lakes whose waters have at last eaten their way out, cutting deep gorges through the rocks.

It is to this wonderful and beautiful land, with all its rich resources and grand and wild scenery, that Dr Denison seeks to attract the consumptive, and we must confess that his book holds out many temptations to those who are strong enough to enjoy the somewhat rough life of a newly settled state. He thinks that without exercise the benefits of the dry air of the mountains are in great measure lost. We doubt it would be difficult to get phthisical patients in Britain to take kindly to the "climbing cure." The physiological effects of the diminished air-pressure are stated to be: The pulse is increased one or two beats by every 1000 feet we ascend, and the respirations become deeper and more frequent. The chest girth is said to be widened. There is no very clear explanation of the curative effects believed to be wrought by high elevations on phthisis. Dr Denison thinks that a height of 6000 feet acts as a preservative against the disease, and gives a number of cases illustrating the benefit derived by visitors whose lungs were already affected. He considers that hæmoptysis in the early stages is not a contra-indication, and even asserts that asthma is sometimes improved by going to great heights.

Though his book will not readily be understood by one who has not studied medicine, many passages are written for the general reader, or rather for those unfortunates who, afflicted with consumption, take upon themselves the responsibility of choosing their own place of health-resort. Indeed, there is a good deal of the guide-book and something of the directory in Dr Denison's work. The style of the book is often uncouth, but the author is very well acquainted with his subject; and we should have liked, in his copious citations of the literature of mountain climates, that he had mentioned the place of publication and date of books quoted, which would have been much more useful than the trite quotations from well-known poets that break the squares of his prosaic pages.

It is curious to observe that Dr Denison, though generally well informed, has only heard of Dagshai and Rassanli (Kussowlie ?) amongst the Himalayan sanitaria; nor does he even seem to be aware of the existence of any in Central India or Ceylon.

He gives us an account of a number of hot and cold mineral springs in Colorado, with tables of chemical analysis. The work is illustrated with a climatic map. It is an unbound volume, in post octavo, of nearly two hundred pages.

Part Third.

MEETINGS OF SOCIETIES.

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING X.

Wednesday, 20th July 1881.—Dr P. H. WATSON, *President, in the Chair.*

I. *Dr James* read a paper on the REFLEX INHIBITORY CENTRE THEORY, of which the following is an abstract:—As regards the theory, it was argued that the increase in the reflex function of the cord which ensues on removal of the brain and higher centres could be better explained by supposing it to be the result of a concentration of nerve force. Schiff has several experiments bearing on this, one in which he found that in the decapitated newt a stimulus applied to the hind legs or tail will produce movements of these parts more and more readily the more of the upper part of the cord is separated from the lower; another, that in the frog the response of the fore legs to peripheral stimulation, *i.e.*, pinching the toes, is increased if the spinal cord be divided in the middle of the back. The fact of the absence of cerebral reflex inhibition in the new-born animal was also brought forward as evidence for the concentration theory, inasmuch as in the new-born the cerebrum is quite undeveloped, so that diffusion of nerve force from the lower nerve centres into it cannot take place. The results of experiments were detailed, showing that a muscle—the gastrocnemius of a frog—will do more work after removal of the brain, etc., than before in response to a stimulus of a certain strength, and the theory that in this way a "mechanical equivalent" of brain work might be obtained was discussed. The function of the nerve cell was next considered, and it was held that the theory which supposes that in reflex action the amount of response depends on a generation of force in the nerve cell requires qualification. Mention was made of the facts that a much stronger stimulus is required to produce a reflex than a direct contraction, and that Wundt has demonstrated an absorption of force as taking place in nerve cells. The trophic influence of the cells was very evident. As regards the nerve fibre, it was suggested that the sheath of Schwann and white substance might have the effect of increasing what might be called the "tension" of the nerve force. In support of this it was mentioned that these structures were well marked in the nerves of striped muscle, whilst in the nerves to unstriped muscle (which responds most readily to currents of low tension) they were much less so. In sensory nerves, also, they are much less marked, whilst in electric fishes they are developed to an enormous extent in the nerves connected with the electric organs. Finally, it was argued that in animals, as in plants, there is a direct absorption of solar energy, and the possible part played in this process by the nervous system was discussed.

Dr Clouston, although certain that they should not be able to discuss adequately Dr James's paper, felt that they should not let it pass without testifying to the profound impression it had made upon them, and how much they appreciated the evident care that had been taken in its preparation, as well as the profound originality of thought displayed in it. He regretted that there were not present some of the more scientific members, who would have been better able to discuss it than they. The paper was too good for mere offhand discussion, which was precluded by the problems it suggested, and the enormous difficulty of the questions raised. It occurred to him, when Dr James discussed his theory of the action of the spinal cord after section, when he put forward his theory of reflex action being due to simple concentration of nervous energy, instead of to an absence of the inhibitory centres so called, that that theory might be quite consistent with the older inhibitory theories, and perhaps subsidiary to them. It might very well be that we had centres of inhibition, the cutting off of which made a difference in regard to the action of the lower centres, and that we had also increased reflex action from the simple concentration of nerve force through its not being diffused through other nerve centres. Speaking offhand, he saw no contradiction between Dr James's theory and the theory of reflex inhibition. As we ordinarily understood volitional inhibition, we had each of us the power of preventing to a large extent reflex actions—for example, the movements of the legs on tickling the soles. Dr James seemed to have put forward a supplementary theory, and not one conflicting with the old theory. In regard to his views that the functions of nerves were not merely conductive, George Henry Lewes had put forward the same theory, but it seemed to him that Lewes's ideas were somewhat crude, and scarcely those of a scientific physiologist. As to the concentrating power of the substance of Schwann, this was a matter for experimentation, and theorizing on it would be out of place. As for the third part of the paper, he could not help feeling that the views therein expressed were highly original and very suggestive, and might possibly be largely true. At the same time it struck him that they were not as yet supported by a sufficient number of facts, except in certain directions. There was no doubt, as all practical physicians knew, immense importance to the life organisms of a sufficient quantity of light, heat, and other forces of nature. There was no doubt that those forces were transformed in some way or other in the living organism, and were manifested as vital phenomena. The nerve cells acted not only in the way of storing energy, but also in the way of transforming the different varieties into what were vital powers. In regard to this point they must all agree with the doctor that there was no such thing as energy created *de novo* in the organism; and considering what must be the enormous amount of light, heat, and chemical energy of all sorts that are required to produce these vital phenomena, it was well that some one like Dr James should have pointed out to them the importance of looking to the cell-element as a transforming agency and power.

Dr Allan Jamieson said some remarks of Dr James on concentration struck him as interesting. Some people had a wonderful power of concentrating their nerve energy in certain directions. This was seen especially in music. The same thing was to be observed among volunteers at rifle practice. At the risk of exciting a smile, he would tell a story in illustration of this. Some time ago there was a gentleman called Ford who practised six or eight hours a day at archery. A prize was offered for three consecutive shots into the centre of the target. Ford put in two consecutive shots, then turned to a friend and said, "What do you bet that I won't put the third in?" "Twenty to one in sovereigns," replied the friend. "Make it shillings, and I will take it," said Ford. The offer was accepted, and Ford, by carefully aiming, put the third arrow into the centre, and won the prize and his bet. This was, he thought, due to the concentration of his nerve energy in that one direction.

Dr Brakenridge felt that it was almost a presumption on the part of those not thoroughly acquainted with physiology to discuss a paper like this without some preparation. He could not help thinking that Dr James had worked out his theory most carefully and thoroughly. He could not yet bring himself to accept it; but the old inhibitory theory was never very satisfactory. He was inclined to think there was much more truth in Dr James's theory than at first sight appeared; but he would not like to express too strong an opinion offhand, as the subject was too difficult.

Dr Taylor agreed with much that had been said regarding the paper. He, however, regretted that Dr James had made it so exhaustive in every respect. He should have liked to hear it in parts, and have it discussed piece by piece. He confessed he had always a difficulty in bringing his mind to agree with the figures and logic of physiologists. He had a difficulty in agreeing with the basis of their experiments. In the experiments of Dr James eighteen frogs were taken, but no attempt was made to get uniformity as regards age, size, stature, breeding, and moral nature. No inquiry was made into either their social or family history. Dr James thus started with a fallacy, and this fallacy ran all the way through his experiments. He thought that Dr James might have got rid of the fallacy by starting with a spawn of frogs, which he might have reared, using the best for the purpose of experimentation, and letting the weakest go to the wall. In this way uniformity of age, bodily vigour, and moral nature would have been got. Dr James drew attention to the multitude of reflex actions produced by one stimulus. He wished to know why Dr James had made no correction here for frogs in different states of nervous derangement. Some of them were decapitated, and would no doubt have their nervous system more deranged than those which were not. He thought chloroform should have been used to overcome the emotional excitement, and thus to get uniformity.

Dr James expressed his gratification for the way in which his paper was received. The theory brought forward as regards concentration was not new, but there had been no tendency on the part of modern physiologists to give it the place it deserved. It was in one sense only supplementary, but it was more important than many people imagined. Our power of inhibiting reflex action might be due to the fact that our brain received the stimulus and the effect was sent down some other channel. As regards the nerve fibres, the theory put forward was mainly a matter of induction. Experimental work on this question was very difficult. The theory of the nerve cell was a matter on which experimentation was difficult, and it also was, to a certain extent, a matter of induction. As to the uniformity question, he had got the frogs as nearly uniform as possible, but he did not know much about their moral nature.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING XIV.

Wednesday, 13th June 1881.—Dr MACDONALD, *President, in the Chair.*

I. *Dr Barbour* showed, for Professor Simpson, some of the FLUID withdrawn from a cervical cyst of unusual size. The patient from whom it was removed was a young lady eighteen years of age, who had been sent to Professor Simpson from England, suffering from menorrhagia and anæmia. Ergot and medicines of various kinds having been of no avail in checking the continuous metrorrhagia, the hymeneal orifice was gradually dilated with the finger. The bimanual examination showed the cervix to be distinctly enlarged, but the fundus uteri was normal in size and position. On dilating the os externum with the finger, a body like a piece of soft blood-clot was felt in the cervical canal, and on complete dilatation it was found to be a soft cystic tumour, springing by a broad base from the anterior and left side of the cervical canal. An exploratory needle was introduced and 2 oz. of a mucous fluid was drawn off.

II. *Dr Hart* then read his paper on THE CAUSATION OF THE MOVEMENTS OF THE HEAD AT THE BRIM OF THE RICKETY PELVIS, WITH ILLUSTRATIVE CASES AND SOME REMARKS ON TREATMENT, which will appear in a future number of this Journal.

The President had listened with extreme interest to a contribution which did such credit to the Edinburgh Obstetrical Society. An excessive amount of ignorance on this subject was recently shown in the debates in the London Obstetrical Society on the use of forceps. Such a paper as this would have saved half the discussion which took place then. The whole discussion turned on the nature and degree of the pelvic deformity. There is no difficulty in cases of extreme deformity, in a pelvis with a conjugate of 1½ inches, because in such the indication is clear. But such cases as have been brought forward in this paper are the touchstone of obstetrical knowledge. He quite agreed with the description of the mechanism which was given, but the explanation of its causation was not quite satisfactory. A great deal was due to Lahs in attempting to give an explanation of the movements of the head, but he had never accepted, in its entirety, Lahs's theory of the girdle of contact. However well it might apply in reference to the uniformly dilative, perfectly elastic cervix, he could not see how it could be maintained when the boundaries of the girdle were rigid and osseous. He was not sure that Dr Hart had succeeded in regard to the explanation of the causation; though with regard to the girdle of contact and the general pressure theory, he believed they both contained germs of truth. With the clinical facts and the practical deductions made from them he entirely agreed.

Dr Croom thought the practical points of the paper were of great interest. He believed in the importance of suprapubic pressure. The value of it was incalculable, for much more force could be applied by pressure on the head than by traction on the legs. The selection of forceps or turning was the most difficult point in obstetrics. He had still difficulty in deciding which to employ in a primipara. It was easy in a multipara when you had the history of former labours as a guide. You could not tell what the mechanism was to be till the membranes were ruptured, and then the favourable opportunity for turning was gone. He would still always have recourse to forceps in the first instance in a primipara.

Dr Barbour thought that the term plane of girdle of resistance was more suggestive than the plane of girdle of contact. But there was not a girdle of equal pressure all round in the rickety mechanism; the head was caught at definite bony points. He was not sure that if this plane was divided by a line joining the points at which the head was caught before and behind, it would be found that the area to the fore-head side was greater than that to the occipital side. Though the spine theory was wrong, being based on a study of the fœtus as a skeleton, and it was more correct to speak of the fœtus as a plastic mass, he did not think that we could reduce the propelling force of the uterus to a question of a fluid pressure acting equably on all parts of the plane of the girdle of contact.

III. *The President* then read his paper on FOURTEEN CASES OF COMPLETED OVARIOTOMY, part of which appears at page 323 of this Journal.

Dr Craig thought no apology was due to the Society by Dr Macdonald for his bringing such an interesting record under notice. The results were gratifying and the statistics carefully given.

IV. *The President* then read his NOTE ON EXAMINATION OF THE URINE IN PUERPERAL PATIENTS, which appeared at page 116 of this Journal.

SESSION XL.—MEETING XV.

Tuesday, 19*th July* 1881.—Dr CHARLES BELL *in the Chair*.

I. *Dr T. R. Ronaldson* read the following paper ON TWO CASES OF LABOUR IN RICKETY PELVIS:—

CASE I.—Mrs W., æt. 30, was delivered of her first child at the full time, 21st November 1878. The child presented with the head first, but the cranium played above the inlet of the pelvis and would not enter. I accordingly turned, and the child was born with no great difficulty. The conjugate was ascertained to measure 3⅝ inches. Not having taken accurate notes of the case, I cannot give further details of the labour. Mrs W. became pregnant a second time, and labour pains set in during the afternoon of 11th December 1880. They continued steadily and increased in frequency during the night and next day. I saw her for the first time at 9.45 P.M. next day, 12th December. On abdominal palpation the head of the child was found above the pelvic brim; the limbs were to the mother's left side, and the back to the right. The fœtal heart was heard loudest at the level of the umbilicus on the right side. On vaginal examination the os was found to be about the size of a five-shilling piece, soft and dilatable. The membranes protruded during a pain like the finger of a glove. The face presented, the fronto-mental diameter lying transversely, the chin to the right. I ruptured the membranes, and introduced my hand into the vagina and through the os in order to make out exactly the relation of parts. The head was found to lie as already indicated. It had passed through the internal os, but lay within the external os, *i.e.*, in the dilated cervix. The internal os encircled the neck of the child moderately tightly. A knuckle of cord had passed through the internal os and was felt at the side of the child's neck. I waited for some time, and as soon as I was satisfied that the head made no progress I applied the long forceps (Professor Simpson's modification of Tarnier's axis-traction forceps). I got a good grip, and pulled with all my strength. The forceps slipped twice without in the least helping the head through the brim. I sent for Dr Hart, and he came to my assistance. He agreed with me as to the position of affairs, and recommended turning, as the forceps had failed. He accordingly gave chloroform, and I proceeded to turn. I introduced my hand into the uterus and found the head rotated through half a circle, the chin and back of the child both lying to the mother's right. The turning was readily accomplished. I had rather more than usual difficulty in getting down the arms; and when that part of the operation was accomplished we turned the woman on her back, so that while I exerted moderate traction from below, Dr Hart energetically applied supra pubic propulsion from above. The head came through the brim with a slight jerk, and there was no further difficulty. The head and neck of the child bore ample evidence of the fact that considerable force had been used in trying to deliver it with forceps. It recovered and is now well.

CASE II.—Mrs L., æt. 28, asked me to attend her during her third confinement. Her previous obstetrical history was as follows: —Her first confinement took place on 17th September 1878. Labour continued from 2 A.M. to 4.30 P.M. Her medical attendant applied instruments, but failed to deliver the child. At 12 noon further assistance was sent for. On the arrival of another medical man forceps were again applied, and finally the child was delivered, but with its head much injured—the scalp being cut open. It lived for 24 hours. Her second confinement took place on 4th January 1880. Labour lasted from 5 A.M. to 9.30 A.M. At 8.30 A.M. forceps were applied, and with the combined strength of the medical attendant and a strong neighbour the child was born dead.

I first saw Mrs L. shortly after the completion of the 8th month of utero-gestation. On hearing her previous history, the question to decide was whether to bring on premature labour or to allow her to go on to her full time, so that the mechanism of parturition in her at the full time might be noted, and a subsequent labour be managed with more accurate data to go upon.

Dr Hart kindly saw her with me, and we agreed that the conjugate at the brim measured 3⅜ inches; moreover, that, considering all the circumstances of the case, it would be best to adopt the latter course. Her third labour began at 4 A.M. 27th January 1881, and lasted until 9.30 A.M. When I arrived I found the os dilated to the size of a 5s. piece, soft and dilatable, membranes unruptured, head presenting, and lying transversely with the occiput to the left and the sagittal suture canted near to the symphysis, and both fontanelles easily felt.

Dr Hart was sent for, and agreed as to the position and the relation of parts. Chloroform having been administered by Dr Hart, I introduced my left hand into the uterus, ruptured the membranes high up, grasped both feet, and turned without difficulty. We had excessive difficulty in getting down the arms, which were jammed forwards against the symphysis. After alternate and repeated trials this was finally accomplished by Dr Hart. To get the head through the brim I pulled from below, while Dr Hart exerted supra pubic propulsion from above, the woman lying on her back. After the use of considerable force the head came through the brim with a jerk, and the delivery was thereafter effected without any difficulty. The child was to all appearance dead, but as there was cardiac pulsation, although it was very feeble and infrequent, we introduced a catheter into the trachea, and thereby very effectively carried on artificial respiration. Backed up by warmth, it certainly saved the child's life when no other kind of artificial respiration gave any prospect of doing good. Finally brandy and sulphuric ether were injected subcutaneously and the child lived. There was a faint depression on that side of the child's head which came into relation with the sacral promontory, but it was not well marked.

Mother and child subsequently did well.

Remarks.—The two cases narrated are examples of the simple flat pelvis.

In Case I. the points to be noted are—(1) the size of the conjugate at the brim, as ascertained by actual measurement, viz., 3⅝ inches; (2) the swinging of the head above the brim without engaging, in her first confinement; (3) the face presentation in her second; (4) the uselessness of the forceps to effect delivery in the latter, although employed with much force; (5) the ease with which delivery was accomplished on turning; (6) the passage of the head through the brim with a slight jerk.

In Case II. the facts to be noted are—(1) the previous obstetrical history of the patient, pointing to serious obstruction to the passage of the child, and to the fatal result, as far as the child was concerned, of the use of the forceps; (2) the size of the conjugate diameter, viz., 3⅜ inches; (3) the position of the head at the brim, transversely situated, sagittal suture canted forwards, anterior fontanelle low down; (4) the much easier transit of the head through the brim on turning than on the use of the forceps; (5) the passage of the head through the brim with a jerk; (6) the mark on the head.

Dr Napier remarked on the value of noting how the child's head lay at the brim, as a means of guiding one to the right treatment. He had recently delivered a living child by turning, where previous children delivered by forceps had been still-born.

II. *Dr Charles Bell* then read his paper ON EXTRA-UTERINE CONCEPTION, which appears at page 294 of this Journal.

Dr Battey of Rome, Georgia, U.S.A., had seen four cases of extra uterine fœtation. In three, no operation could be performed, and in one he had operated as he would afterwards detail. In cases where the fœtus had died, their duty was to wait and let nature as it were lead on, aiding her when necessary. When the fœtus was living, a very grave question arose, throwing very great responsibility on the medical man in charge. There was really no fixed rule. Cases of operation there were in fair amount and with moderate success. In his own case the patient was in the sixth month of gestation. The diagnosis was very difficult; and doubt and scepticism were expressed by other medical men as to the opinion he had given on the case. The os uteri was inaccessible, the uterus high up and to the left, and the true pelvis filled with a sac. Ballottement was obscure at first, but more distinct afterwards. Fœtal movements were obscurely felt. The distress and pain felt by the patient were unusual, and latterly the obstruction to the bowels very serious. There was also difficulty in emptying the bladder, so that the catheter had to be employed. The bowel indeed was so loaded, that after operation a large amount of fæcal matter issued simply from the distention. The case was such as forced him to operate. In making the vaginal incision, he used Chassaignac's ecraseur, first passing the curved trocar with reversible blade. He punctured the sac in front of the rectum, and shoved the canula towards the neck of the uterus as high as he could. He next brought out the trocar in front of the uterus, caused the chain to follow, and cut through the tissues without hæmorrhage. In seizing the fœtus the opening proved too small. This displaced the placenta, and a fearful gush of blood occurred. He tamponned both sac and vagina, but the patient became pulseless. Under frequent hypodermics of whisky (140-150) she rallied, however, but died ultimately from septicæmia on the 6th or 7th day. The child survived 1½ hours. Dr T. G. Thomas had operated with good success in four cases. It was evident that every case had to be treated on its own merits.

On the motion of Dr Napier of Dunbar, seconded by Dr Chas. Bell, a vote of thanks was unanimously accorded to Dr Battey.

ADDRESS TO STUDENTS.

1881-2.

"HOW TO GET ON IN PRACTICE."

FOR several years we have endeavoured, in the October number, to say a few words on the relative importance of the different branches of professional education; on the various modes of turning opportunities to the best advantage; on the choice of a special department of practice; and on other kindred topics. This year we purpose to offer a few hints—the result of long experience and observation—which may help to answer the question at the head of this paragraph, a question that often rises even during student days, and inevitably faces every young doctor when those bright days are about to merge into the stern responsibilities of actual practice.

A few preliminary remarks may clear the ground, so to speak, before we attempt to answer the question.

Our first remark is, that no man ought to expect to get on in practice unless he has really done his best to *deserve* success, by the honest and earnest manner in which he has hitherto prosecuted his studies. The mere fact that he has obtained a diploma, a degree, or both, after undergoing the usual examinations, is no trustworthy proof that he is a competent man; he may have passed through these ordeals from the fortunate circumstance that topics were chosen with which he is, to a certain extent, familiar; or he may have been *crammed* elaborately for the occasion with answers which imply no reliable knowledge, and will probably be forgotten before many weeks have passed. In the nature of things, an examination or a series of examinations must often fail in exposing the unworthy; and it is quite possible, that some such individuals may pass with *éclat*, when others, the possessors of genuine knowledge—genuine because the result of painstaking and thought—receive their license to practise with doubts and misgivings on the part of their examiners. Our object in adverting to them is to show that considerable deductions may be safely made from the number of those men who presume to regard the question we are proposing to answer as one in which they have a right to be deeply interested.

Our second remark is, that while accepting thoroughly the great truth that sovereign arrangements in Providence have much to do with success in life—a man's bodily health, for example, his geographical position, his family and social surroundings—we are convinced by the retrospective survey of many years, that there is a notable correspondence in every man's history between his personal qualifications and his eventual success. "As he sows, so shall he also reap." Of course, this law, like every other, has its exceptions; but in the aggregate, viewed statistically, it will be found to be as we have said. It holds good in all departments of life, and specially, we think, in the medical profession, which affords such ample scope for moral and personal qualities in combination with those that are scientific and practical. What we mean to aver is this: that, as a general rule, we can seldom say with propriety that this man is fortunate or that man unfortunate, because it will be found in the end that each gets on in his profession, if all the circumstances are duly estimated, just as well as he had any good reason to expect. For example, without materially anticipating what we may have to say afterwards, two men, equally conscientious and painstaking as students, equally capable as practitioners, so far as professional attainments go, may be crowned with very different degrees of worldly prosperity. We need not try to satisfy our minds with the truism, that one has been more favoured than the other by fortune or by Providence. That explanation is so far correct and cannot be disputed. But careful observation and inquiry will tell us, that the more successful of the two, in addition to professional capability, is endowed with certain personal attributes which his neighbour does not possess. Such individual and inherent differences among men often turn the scale.

We may now try to answer the question, *How to get on in practice.* There are commendable ways, and there are ways to be shunned. We shall notice them in order.

Commendable.—1. Realize habitually your responsibility as a medical man, and do your very best, on all occasions, for those who consult you. The ailment may seem trivial, but it is not altogether so in the estimation of your patients, otherwise they would not have asked your advice. If the case is a serious one, your benevolence ought to come in aid of your sense of responsibility in calling forth your whole mind in ministering to your patient's relief. It is here that a marked diversity among men will appear. The sense of responsibility may be equal, but one man is thinking of his own credit mainly, while another shows by his whole bearing and manner that his benevolence preponderates, and that he is feeling more for his patient than for himself. Of course, this which is easily, we may say instinctively recognised, strengthens the confidence reposed in him; probably expedites the curative result of the means which he employs, and leaves subsequently a pleasant and lasting impression in his favour. His merits are widely and gratefully spoken of to others; he is on the fair way *to get on.* Keep this in mind, and if your benevolence, your compassion is not adequately and spontaneously stirred, try to foster it by kindly consideration of the circumstances. There is nothing dishonest or hypocritical in this. You merely use means and do your best to cultivate a right state of feeling, and the consideration will initiate and strengthen a habit.

2. Remember always your position as a well-educated professional man, and beware of deferring too easily to the preconceived opinions, the prejudices of your patients or of their friends; but having made up your mind as to the nature of the case and the proper treatment, adhere firmly to the advice which you have given. Do not justify your proceedings by reasons, which in the nature of things must be virtually unintelligible to the unprofessional mind. If you give in a single inch in order to please, people will reasonably infer that your own mind is wavering, and as a consequence their trust in you will be sapped. Better to cause temporary annoyance or even displeasure, than to awaken the idea that your opinion is unreliable.

Here we may advert to two most important qualities in a medical man: decision and promptitude in action. They cannot be over-rated as helps for getting on in practice. They are born with some men, but may be cultivated by all. True, when associated with ignorance or imperfect knowledge, they may lead to rashness; still bear in mind that, as a rule, there is no commoner cause of hesitation and indecision than a *consciousness* of defective information. But when a man, prompt and decided by nature, knows his work, he inspires every one about him with confidence in his power to help. Yet a constitutionally diffident and hesitating individual may hopefully endeavour to conceal his infirmity; and in making the attempt, let him attend to three pithy pieces of advice which that great surgeon and sagacious man, the late Mr Syme, was in the way of giving to his students. Never *appear* surprised at anything; never ask the same question twice; never felicitate yourself on the good effect of your remedies unless sure that they have been used. It is obvious that a flagrant breach of any of these rules would tend to shake the confidence of your patient, while attention to them will enable you to stand well both with him and with yourself.

If you *have* doubts in any serious case, honestly acknowledge them, and propose a consultation; but if that is out of the question, from the remoteness of position or any other reason, show unmistakably an interest in your patient, and apply yourself afresh to the study of his case with watchful care, in the hope of new light being thrown upon it.

3. It will soon be apparent that your heart is in your profession, and that you are aiming to accomplish yourself as a practitioner who merits success. Let us say here that this is probably the most important secret for getting on in practice—to convey the impression that you are anxious, that it is your primary object, and that you will spare neither time nor trouble in reaching it. When a man is seen to allow other pursuits, other interests to occupy a large portion of his time and thoughts, the idea gets abroad that, however conscientiously he may perform his professional duties, they hold a subordinate place in his own esti-

mation, and that it is unnecessary to press your case upon his attention when there are so many other men seeking to be employed. In making these remarks we are thinking of men in early and middle life. As years creep on, and practice, in the course of things, falls by degrees into younger hands, it is fitting and natural, that if a man's mental powers are spared to him, other interests and occupations should be permitted to assume a place of greater prominence.

4. But young or old, while your professional duties manifestly occupy the principal place in your regards, it will be well for yourself as an individual and for the honour of your craft, that you take a due interest in science, in literature, in current affairs, otherwise the favourable impression formed of your qualifications may suffer abatement. To put desirable confidence in a doctor, he must be seen to be on a level, at the very least, with the people among whom he associates, in general knowledge, intelligence, and culture. This, with proper economy of time, he can and ought to be while performing his part as a surgeon or physician with earnestness and devotion.

5. We have said nothing as yet in regard to the manners of a practitioner fitted to promote his success. Of course, they ought to be those of a gentleman, simple, easy, self-possessed. But something more is desirable. The benevolence already spoken of will show itself on all occasions; but it needs to be tempered by good sense and tact under varying circumstances. When a patient is seen to require encouragement, a cheerful, kindly look or word will do him much good; and if a nice appreciation of the state of things on the part of his doctor should indicate gravity for the time being, his manner will correspond. As a rule, a doctor, constitutionally cheerful and lively, will be more acceptable and popular if he is kindly and sympathetic too, than one who, with the best feelings towards his patient and his attendants, is by natural proclivity grave and demure. But if the latter attempts to be markedly different from what he really is, he will probably fail; and it is therefore wiser for him to be kind in his own quiet way—feeling as benevolently as he can, without assuming a forced cheerfulness and vivacity alien to his natural disposition.

In giving these hints, we have had in view the average run of young men who possess no special advantages of position fitted to secure for them a large measure of success independently of personal qualities in their bearing and manner. If a man teaches some branch of his profession with moderate satisfaction to himself and others—if he occupies the post of physician or surgeon to a large hospital with many students in daily attendance—he may expect considerable success in practice, whatever may be his manners or tact. But it is worthy of being noted, that even such advantages of position are almost neutralized in some cases when the occupant fails in those personal characteristics to which we have been trying to attach importance. On the other hand, we could mention men, who never filled any public position, conspicuous for getting on in practice—even consulting practice—by reason of a charming manner, engrafted on, or a natural outcome from, their other sterling qualities. We have known also one or two instances of men, equally devoid of public appointments and of any charm of manner, still winning the highest position as consultants through the sheer force of indisputable professional superiority, honesty of purpose, and weight of character. These last, however, are very exceptional cases, and do not contravene the suggestions we have already made.

We used the expression sterling qualities. Among these may be mentioned strict professional integrity, a trustworthy power of retaining those personal and family secrets to which the medical man is often necessarily made a confided party, and a distaste for spreading local gossip, which, particularly in rural neighbourhoods, is a common temptation and a great source of mischief. The possession of these and such like reliable qualities is very essential for one who desires to get on in practice.

Ways to be shunned.—A few of these may be briefly alluded to. They may be all traced to selfishness, and betray a sad lack of those high and honourable sentiments which ought to characterize every member of a profession with such lofty and dignified aims as that of medicine. Any attempt, however latent—in the form of *inuendo* even—to depreciate or disparage a brother practitioner; any means purposely devised to get one's self advanced by laudatory conversation or to persuade people to change their medical attendant; any allusion to successful cases in the daily papers; any undue setting forth of one's own name with a view to notoriety; any organized plan for gaining the favour of a class or *coterie*—political or ecclesiastical;—all such plans and devices come under the designation of reprehensible methods for getting on in practice. They sometimes, no doubt, bear premature unripe fruit; but unless timeously abandoned, are sooner or later seen through, and ultimately prove detrimental to him who has recourse to them. For even although he should succeed by means of them in gaining a lucrative practice, he loses the respect of his brethren—if he ever possessed it—and will not go down to the grave with the cordial benedictions of those who knew his history. The one guiding principle which will keep you right as regards your fellow-practitioners—solving at once all questions of professional etiquette—is that of doing to others invariably as you would have them do to you in the like circumstances.

INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE following are the Regulations of the General Medical Council for the Registration of Medical Students:—

I.—PRELIMINARY EXAMINATIONS.

1. That no person be allowed to be registered as a Medical Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as hereinafter provided.

2. That it be delegated to the Executive Committee to prepare Annually and lay before the Council for Recognition a List of Examining Bodies, whose Examinations fulfil the conditions of the Medical Council as regards General Education.

3. That, for the present, Testimonials of Proficiency granted by Educational Bodies, according to the subjoined list, be accepted, the Council reserving the right to add to, or take from, the list.

N.B.—A Degree in Arts of any University of the United Kingdom or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council, is considered a sufficient Testimonial of Proficiency.

List of Examining Bodies whose Examinations fulfil the Conditions of the Medical Council, as regards Preliminary Education.

(1.) UNIVERSITIES OF THE UNITED KINGDOM.

Oxford.—Examination for a Degree in Arts. Responsions, Moderations, Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics; and also one of the following optional subjects:—Greek; French; German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Cambridge.—Examination for a Degree in Arts. Previous Examination. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics. Higher Local Examinations.

Durham.—Examination for a Degree in Arts. Examination for Students in their second and first years. Registration Examination for Medical Students. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Oxford and Cambridge Schools' Examination Board.—Certificate to include English Language, including Grammar and Composition; Arithmetic, including Vulgar and Decimal Fractions; Algebra, including Simple Equations; Geometry, First two books of Euclid; Latin, including Translation and Grammar; and one of the following optional subjects:—Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

London.—Examination for a Degree in Arts. Matriculation Examination.

Aberdeen, Edinburgh, Glasgow, and St Andrews.—Examination for a Degree in Arts. Preliminary Examination for Graduation in Medicine or Surgery.

Edinburgh, Aberdeen, and St Andrews.—Examination of (Senior) Candidates for Honorary Certificates under the Local Examinations of these Universities.

Dublin.—Examination for a Degree in Arts. Entrance Examination.

Queen's University (Ireland).—Examination for a Degree in Arts. Entrance Examination. Examination for the Diploma of Licentiate in Arts. Previous

Examination for B.A. Degree. Local Examinations, including all the subjects required.

(2.) OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Surgeons of England.—Examination conducted under the Superintendence of the College of Surgeons, by the Board of Examiners of the Royal College of Preceptors.

The Society of Apothecaries of London.—Examination in Arts.

Royal Colleges of Physicians and Surgeons, Edinburgh.—Preliminary Examination in General Education, conducted by a Board appointed by these two Colleges combined.

Faculty of Physicians and Surgeons of Glasgow.—Preliminary Examination in General Literature.

Royal College of Surgeons in Ireland.—Preliminary Examination, Certificate to include all the subjects required.

Apothecaries' Hall of Ireland.—Preliminary Examination in General Education.

(3.) EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Preceptors.—Examination for a First Class Certificate.

The Examiners for Commissions and Appointments in Her Majesty's Service, Military, Naval, and Civil.—Certificate to include all the subjects required by the General Medical Council.

(4.) INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

Universities of Calcutta, Madras, and Bombay.—Entrance Examination, Certificate to include Latin.

M'Gill College, and Bishop's College, Montreal.—Matriculation Examination.

University of Toronto, Trinity College, Toronto, Queen's College, Kingston, Victoria College, Upper Canada, and University of Manitoba.—Matriculation Examination.

King's College, Nova Scotia.—Matriculation Examination. Responsions.

Medical College, Halifax, Nova Scotia.—Matriculation Examination.

University of Fredericton, New Brunswick.—Matriculation Examination.

University of Melbourne.—Matriculation Examination, Certificate to include all the subjects required by the General Medical Council.

University of Sydney.—Matriculation Examination.

University of the Cape of Good Hope.—Matriculation Examination.

University of Adelaide.—Matriculation Examination. Primary Examination.

Codrington College, Barbadoes.—1. English Certificate for Students of two years' standing, specifying the subjects of Examination. 2. Latin Certificate, or "Testamur."

Tasmanian Council of Education.—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

Christ's College, Canterbury, New Zealand.—Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

South Australia.—South Australian Institute, Adelaide.—Preliminary General Examination: First Class Certificate.

University of New Zealand.—Entrance Examination.

University of Otago.—Preliminary Examination.

Ceylon Medical College.—Preliminary Examination.

In accordance with a resolution of the General Medical Council, it was recommended to the several Examining boards whose Examinations are recognised by the Council, that, on and after January 1, 1882, "no person be allowed to be registered as a Medical Student unless he shall have previously passed a

Preliminary Examination in the subjects of General Education as specified in the following list:—1. English Language, including Grammar and Composition;[1] 2. English History; 3. Modern Geography; 4. Latin, including Translation from the original, and Grammar; 5. Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including Simple Equations; (*c*) Geometry, including the first two books of Euclid or the subjects thereof; 6. Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics;[2] 7. One of the following optional subjects:—(1) Greek; (2) French; (3), German; (4) Italian; (5) any other Modern Language; (6) Logic; (7) Botany; (8) Elementary Chemistry."

II.—REGISTRATION OF MEDICAL STUDENTS.

1. No Medical Student shall be registered until he has passed a Preliminary Examination, as required by the General Medical Council, and has produced evidence that he has commenced Medical Study.

2. The commencement of the course of Professional Study recognised by any of the Qualifying Bodies shall not be reckoned as dating earlier than fifteen days before the date of Registration.

3. The Registration of Medical Students shall be placed under the charge of the Branch Registrars.

4. Every person desirous of being registered as a Medical Student shall apply to the Branch Registrar of the division of the United Kingdom in which he is residing, according to a Form which may be had on application to the several Qualifying Bodies, Medical Schools, and Hospitals; and shall produce or forward to the Branch Registrar a Certificate of his having passed a Preliminary Examination, as required by the General Medical Council, and evidence that he has commenced Medical Study.

The following pages contain a tabular abstract of the regulations of the various Licensing Boards, as well as a list of the Hospitals, Dispensaries, etc., attached to our Scotch Medical Schools; also the regulations for the Army, Indian, and Navy Medical Services. The space at our disposal does not allow of more detailed information. But, in point of fact, the regulations of all Licensing Boards now correspond much more closely than they used to do, and the regulations of the General Medical Council afford a key to the general requirements of all of them. For special information, application should always be made to the Secretaries of the Licensing Boards; or, in the case of the Universities, recourse may be had to the published Calendars.

The *Preliminary Examinations* are usually held before the commencement, and at the end, of the Winter Session,—viz., in October, March, or April—sometimes also at the end of the Summer Session. The Professional Examinations in Universities are usually after the Winter and during the Summer Sessions; in Edinburgh, however, the first Professional is held in October as well as April. The other Licensing Boards' examinations are held at various periods throughout the year. Special examinations, under circumstances of urgency, can be held at almost any time; but they, of course, entail considerable addition to the expense.

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[1] The General Medical Council will not consider any Examination in English sufficient that does not fully test the ability of the candidate,—(1) To write sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition; (2) to write correctly from dictation; (3) to explain the grammatical construction of sentences; (4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use.

[2] This subject may be passed either as Preliminary, or before, or at the first Professional Examination.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology or Institutes of Medicine.	Surgery.	Practice of Medicine.	Midwifery.	Medical Jurisprudence.	Pathology or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Clinical Surgery.	Clinical Medicine.	Hospital Attendance.	Practical Midwifery.	Dispensary or Out-door Practice.	Vaccination.
	Years.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	
Edinburgh University, M.B. & C.M., . .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	3 mo., or 6 cas.	6	
University of Glasgow, M.B. & C.M., . .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	do.	6	
University of Aberdeen, M.B. & C.M., .	21	6	6	6	3	6	6	6	6	6	3		3	3	3	6	6	24	do.	6	
University of St Andrews, M.B. & C.M., .	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	do.	6	
London University, M.B., ...	21	6	12	6	1 crs.	1 crs.	6	6	6	1 crs.	1 crs.	1 crs.			1 crs.	2 yrs.	2 yrs.	4 yrs.	20 cas.	6	
University of Durham, M.B. & M.D., . .	21																				
Dublin University, M.B., ...		6	6	6	3	3	3	6	6	6	3		3				9	24	6 mo.		
„ „ Surgical Diploma, .		12	18	6	3	6	18	12	6	6	3		3			27	27	27			
The Queen's University of Ireland, M.D.,		12	12	6	3	6	12	6	6	6	3		3	3	3 mos.	12	12	24	3 mo.		
Royal College of Physicians, London, .	21	12	12	6	3	3	12	6	12	3	3	6	3		3		9	24	20 cas.		
Royal College of Physicians, Edinburgh,	21	6	6	6	3	3	6	6	6	3	3	3	3		3	3	6	24	6cases		
King and Queen's Col. of Phys. Ireland, .	21	6	12	6	6	6	6	6	6	6	6		6			6	21	27	6 mo.		
Royal College of Surgeons, London,* . .	21	12	12	6		3	12*	12	6	3					3	27*	9*	33			Cert.
Royal College of Surgeons, Dublin, . .	21	18	18	6	6	3	18	18	6	3	3					18	9	27			
Royal College of Surgeons, Edinburgh, .	21	12	12	6	3	3	3	6 or 12	6	3	3	3			3	6 or 12	6	24	6 cas.	6	Cert.
Faculty of Phys. and Surgeons, Glasgow,	21	12	12	6	3	3	3	6 or 12	6	3	3				3	6 or 12	6	24	6 cas.		
For Double Qualification by Royal College of Phys. and Surg. of Edinburgh,	21	12	12	6	3	3	3	6 or 12	6 or 12	3	3	3			3	6 or 12	6 or 12	24	6 cas.	6	Cert.
For Double Qualification by Royal College Phys. Edinburgh, and Faculty of Physicians and Surgeons of Glasgow,	21	12	12	6	3	3	6	6 or 12	6	3	3	3			3	6 or 12	12	24	6 cas.		
Apothecaries' Hall, England, ...	21	12	6	6	3	3	6		12	3	3	6	3		Appr.		27	27	20 cas.		9 mo.
„ „ Ireland, ...	21	6	12	6	3	3	6	6	6	6	3		3		Appr.	9	18	27	20 cas.		

English Poor-Law Board.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licenses granted by competent legal authority in England, Scotland, or Ireland.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

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* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months Clinical Surgery, six months Clinical Medicine, and twenty-four months hospital.

MEDICAL SCHOOLS OF SCOTLAND, 1881–82.

WINTER SESSION.

Subjects.	University of Edinburgh.	School of Medicine, Edinburgh.	University of Glasgow.	Anderson's College, Glasgow.	Glasgow Royal Infirmary School of Medicine.	University of Aberdeen.	University of St Andrews.
natomy, Systematic and ractical, with emonstrations.	Professor Turner.	Mr J. Symington and Mr Cathcart.†	Professor Cleland.	Dr A. M. Buchanan.	Mr H. E. Clark.	Professor Struthers.	...
hysiology, or Institutes of Medicine.*	Professor Rutherford.	Dr James and Mr James Hunter.	Professor M'Kendrick.	Dr Barlow.	Dr W. J. Fleming.	Professor Stirling.	Professor Pettigrew.
hemistry, and Practical Chemistry.	Professor C. Brown.	Dr Macadam, Mr King,† Mr I. Macadam, Dr Drinkwater, and Mr J. Y. Buchanan.	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Professor Brazier.	Professor Heddle.
ateria Medica and Therapeutics.	Professor Fraser.	Dr Moinet † and Dr Wm. Craig.	Professor Charteris.	Dr Morton.	Dr John Dougall.	Professor Davidson.	...
Practice of Medicine.	Professor Grainger Stewart.	Drs Wyllie,† Affleck, and Bramwell.	Professor Gairdner.	Dr S. Gemmell.	Dr J. W. Auderson.	Prof. Smith-Shand.	...
Surgery.	Professor Spence.	Dr Watson,† Mr Chiene, Dr John Duncan, Dr Miller.	Professor Macleod.	Dr Dunlop.	Dr W. Macewen.	Professor Pirrie.	...
Midwifery.	Professor Simpson.	Drs H. Croom, and C. Bell.†	Professor Leishman.	In Summer.	In Summer.	Professor Stephenson.	...
Natural Philosophy.	Professor Tait.	...	Professor Sir Wm. Thomson.	Prof. Blythe.	...	Professor Niven.	Professor Butler.
Natural History.	Professor Sir Wyville Thomson.	Dr A. Wilson.	Professor Young.	...	...	Professor J. Cossar Ewart.	Professor Nicholson.
General Pathology.	Professor Greenfield.	Dr B. C. Waller and Dr Buist.	Dr Joseph Coats.	At Royal or Western Infirmary.	...	Dr Rodger.	...
Clinical Medicine.	Professors Maclagan, G. Stewart, and T. R. Fraser.	Drs Balfour,‡ Muirhead, and Brakenridge.	Prof. M'Call Anderson & Physicians of Western Infirmary.	The Physicians of the Royal Infirmary.		Drs Smith-Shand, Beveridge, and Fraser.	...
Clinical Surgery.	Professor Annandale.	Mr Joseph Bell.	Prof. George Buchanan & Surgeons of Western Infirmary.	The Surgeons of the Royal Infirmary.		Drs Ogston, O. Will, and Garden.	...

Lectures on the Diseases of the Ear are given in Edinburgh during the Winter Session by Dr Kirk Duncanson.

Practical Physiology is taught by the respective professors during the Winter Session in Edinburgh and Aberdeen.

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* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students, which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1882.

SUMMER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	UNIVERSITY OF ABERDE
Practical Anatomy and Demonstrations.	Professor Turner.	Mr J. Symington and Mr Cathcart.*	Professor Cleland.	Dr A. M. Buchanan.	Mr H. E. Clark.	Professor Struthers
Botany.	Professor Dickson.	...	Professor Bayley Balfour.	Prof. Wilson.	...	Professor W. H. Tra
Materia Medica.	Professor Fraser.	Drs Moinet* and Craig.	Professor Charteris and Dr Napier.	Dr Morton and Dr Pollock.	...	Professor Davidson
Midwifery.	Professor Simpson.	Drs Keiller,* Underhill, Croom, and Charles Bell.	...	Dr A. Wallace.	Dr James Stirton.	Professor Stephens
Medical Jurisprudence.	Professor Maclagan.†	Dr Littlejohn.†	Professor Simpson.	Dr Alexander Lindsay.	Mr John Glaister.	Professor Ogston.*
Comparative Anatomy.	Professor Turner.	Mr Cathcart.	...	...	...	Professor J Cossar Ewa
Practical Physiology, including Histology.	Professor Rutherford.	Dr James and Mr James Hunter.	Professor M'Kendrick.	Dr Barlow.	Dr W. J. Fleming.	Professor Stirling.
Practical Pathology, including Histology.	Professor Greenfield.	...	Dr Joseph Coats.	Dr Foulis, at Royal Infirmary.	Dr D. Foulis.	Dr Rodger
Practical Chemistry.	Professor Crum Brown.	Dr Macadam, Mr King, Mr I. Macadam, Dr Drinkwater, and Mr J. Y. Buchanan.*	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Prof. Brazi
Operative Surgery.	Professor Spence.	Dr Watson,* Mr Chiene, Dr J. Duncan, Dr A. G Miller.	Professor Macleod.	Dr Dunlop.	Dr W. Macewen.	...
Pathology.	Professor Greenfield.	Dr B. C. Waller, and Dr Buist.	...	Dr Foulis, at Royal Infirmary.	Dr D. Foulis.	...
Mental Diseases.	Dr Clouston.	...	...	...	Dr Alex. Robertson.	..
Natural History.	Professor Sir Wyville Thomson.	Dr A. Wilson	Professor Young.	...	...	Professor J Cossar Ewar
Clinical Medicine.	Professors G. Stewart, and T. R. Fraser.	Drs Balfour,‡ Muirhead, and Brakenridge.	Prof. M'Call Anderson and Physicians of W. Infirmary.	The Physicians of the Royal Infirmary.		Drs Smith-Sha Beveridge, and Fras
Clinical Surgery.	Professor Annandale.	Mr Joseph Bell.	Prof. George Buchanan and Surgeons of W. Infirmary.	The Surgeons of the Royal Infirmary.		Drs Ogston O. Will an Garden.

Operative Surgery is taught during the Summer in Edinburgh by Messrs Chiene and Duncan and Dr Miller, and in Glasgow by Professor Macleod. Instruction in Vaccination is also given at the Royal Public Dispensary, Edinburgh, on Wednesdays and Saturdays at 12, both Summer and Winter, by Dr Husband; at the Faculty Hall, Glasgow, on Mondays at 12, by Dr Thomson; and at the Royal Infirmary, Glasgow, on Mondays and Thursdays at 12 o'clock, by Dr Tannahill, and Dr M'Vail, at Western Infirmary, on Mondays at 1 P.M. Medical Psychology and Insanity are taught in Summer by Dr Clouston and Dr J. B. Tuke in Edinburgh, and in Glasgow by Dr Yellowlees and Dr Robertson; the Diseases of Children by Drs Andrew, Dunsmure, and Carmichael; the Diseases of the Eye by Dr Argyll Robertson in Edinburgh, Professor A. Dyce Davidson in Aberdeen, and by Dr Thomas Reid, Mr Clark, and Dr Wolfe in Glasgow; the Diseases of the Ear by Dr Kirk Duncanson in Edinburgh, and by Dr J. P. Cassells and Dr Johnstone Macfie in Glasgow; and Dental Surgery by Dr J. C. Woodburn in Glasgow, and Mr Williamson in Aberdeen.

* These are not conjoint courses, but separate ones by the gentlemen named.

† Dr Ogston delivers his courses only in Winter. Dr Littlejohn gives courses during both the Winter and Summer Sessions. Dr Maclagan also lectures during both Summer and Winter. The Winter Course is chiefly intended for law students, but is open to medical students also.

‡ This is a joint course.

*** For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including **LOCK HOSPITAL**. Upwards of 560 Beds. Visits daily from 12 till 2 P.M. Physicians—Drs Maclagan, Grainger Stewart, Fraser, and Greenfield, Professors of Clinical Medicine; Professor Simpson and Dr Angus Macdonald (for Diseases of Women); Drs G. W. Balfour, Claud Muirhead, and D. J. Brakenridge, Clinical Lecturers. Assistant Physicians—Drs John Wyllie, James O. Affleck, and Andrew Smart. Consulting Physicians—Dr D. R. Haldane; Dr Alex. Keiller (for Diseases of Women). Pathologist, Dr D. J. Hamilton.

Surgeons—Professors Spence and Annandale, Mr Joseph Bell, Dr John Duncan, and Mr Chiene. Extra Surgeons, Dr P. H. Watson; Dr Thomas Keith (for Ovarian Diseases). Assistant Surgeons, Drs A. G. Miller, P. H. Maclaren, and John Bishop. Consulting Surgeons, Dr Dunsmure and Dr Gillespie. Ophthalmic Surgeons, Mr Walker and Dr Argyll Robertson. Dental Surgeon, Dr John Smith.

CONVALESCENT HOUSE, Corstorphine. Acting Surgeon, Dr P. H. Maclaren.

CHALMERS HOSPITAL FOR THE SICK AND HURT. 24 Beds for medical and surgical patients. Physician, Dr Halliday Douglas. Surgeon, Dr P. H. Watson.

ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL. 30 Beds; about 200 in-patients and 450 out-patients yearly. Consulting Physicians, Drs Moir and Graham Weir. Physicians, Dr Keiller, Professor Simpson, Drs Halliday Croom and Angus Macdonald. Consulting Surgeon, Dr Dunsmure.

ROYAL HOSPITAL FOR SICK CHILDREN. 60 Beds; average number of out-patients, about 5600. Consulting Physicians, Sir Robert Christison, Dr C. Wilson, Dr Graham Weir, and Dr George W. Balfour. Consulting Surgeon, Professor Spence. Physicians, Drs J. Dunsmure, jun., J. Andrew, C. E. Underhill, and R. J. Blair Cunynghame. Extra Physicians, Drs Carmichael and Playfair. Surgeon-Dentist, Dr Smith. Ophthalmic Surgeon, Dr Argyll Robertson.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 12,700 patients annually. Medical Officers, Professor Spence, Drs Linton, Husband, Andrew, D. Wilson, Moinet, Alexander Sinclair, Allan, Jamieson, Cotterill, and Miller. Physician-Accoucheurs, Drs Keiller and Andrew. Superintendent of Vaccination, Dr Husband. Medical Secretary, Dr Andrew. Clinique daily at 2 P.M. Vaccination on Wednesdays and Saturdays at 12 noon. Apothecary, Mr John Nicol.

NEW TOWN DISPENSARY. About 10,000 patients annually. Medical Officers, Drs Cunynghame, Affleck, Cadell, Dunsmure, Wyllie, Carmichael, Ritchie, Tuke, Playfair, Montgomerie Bell, and James. Physician-Accoucheurs, Drs Dunsmure, jun., and Underhill. Superintendent of Vaccination, Dr Affleck. Clinique daily at 2 P.M. Vaccination on Tuesdays and Fridays from 12 to 1.

ROYAL ASYLUM FOR THE INSANE. About 660 patients. Physician, Dr Clouston.

EYE INFIRMARY, 6 Cambridge Street, Lothian Road. Surgeons, Benjamin Bell, Esq., F.R.C.S., and Joseph Bell, F.R.C.S. Assistant Surgeon, Dr J. Kirk Duncanson. Open daily at 1 P.M. Average number of patients annually, 1100.

EYE DISPENSARY, 54 Cockburn Street. About 2000 patients annually. Surgeons, Mr Walker, Dr Wilson, and Dr Argyll Robertson. Open Mondays, Wednesdays, and Fridays, at 1 P.M. Clinical instruction during the summer session.

EAR DISPENSARY OF EDINBURGH, 17 Thistle Street. Drs T. Keith and Blair Cunynghame, and Mr Chiene. Open Tuesdays at 11.

EAR DISPENSARY, 6 Cambridge Street, Lothian Road. Surgeon, Dr J. Kirk Duncanson. Open Mondays and Thursdays, from 12 to 1 o'clock. Number of patients treated annually, 500.

DENTAL HOSPITAL AND SCHOOL, 30 Chambers Street. Consulting Physician, Alexander Peddie, M.D., F.R.C.P.E. Consulting Surgeon, Professor Spence, F.R.C.S.E. Consulting Dental Surgeon, John Smith. M.D., F.R.C.S.E. Dental Surgeons, Messrs C. Matthew, J. T. Cunningham, W. B. Macleod, M. Finlayson, A. Wilson, G. W. Watson, and M. Macgregor. Assistant Dental Surgeons, E. A. Cormack, W. Forrester, James Cooper, J. S. Durward, James Mackintosh, and James Lindsay. Mr W. Bowman Macleod, L.D.S., Edin., Dean and Hon. Treas. James Robertson, Solicitor, 4 Lindsay Place, Edinburgh, General Secretary. Daily, 9 to 10 A.M. Average number of patients, 4500 per annum.

GLASGOW.

ROYAL INFIRMARY. 532 Beds. Visit daily at 9 A.M. Dispensary Hour, 2 P.M. Physicians, Drs Maclaren, Scott Orr, Wood Smith, Perry, and Charteris.

Surgeons, Drs Morton, Watson, Macewen, Dunlop, and Clark. Gynæcologist, Dr Stirton. Aural Surgeon, Dr Macfie. Dental Surgeon, Dr Woodburn. Dispensary Physicians, Drs Mather and Lawrie. Extra Dispensary Physicians, Drs J. W. Anderson, John Weir, and John Dougall. Dispensary Surgeons, Dr Lothian and Dr Foulis. Extra Dispensary Surgeons, Dr Whitson, Dr W. J. Fleming, and Dr Foulis. Vaccinator, Robert Tannahill, M.D. M. Thomas, M.D., Superintendent.

WESTERN INFIRMARY. This Hospital contains 370 Beds for Medical and Surgical patients, with Wards for Skin Diseases and Diseases of Women, and out-door Midwifery department. Physicians, W. T. Gairdner, M.D., T. M'Call Anderson, M.D., James Finlayson, M.D., Gavin P. Tennent, M.D. Diseases of Women, W. Leishman, M.D. Surgeons, George H. B. Macleod, M.D., George Buchanan, M.D., A. Patterson, M.D., Hector C. Cameron, M.D. Out-door Physicians-Accoucheur, Robert Kirk, M.D., W. L. Reid, M.D., M. Cameron, M.D. Dispensary Physicians, Joseph Coats, M.D., D. C. M'Vail, M.B., S. Gemmel, M.D. Dispensary Surgeons, James G. Lyon, M.D., D. N. Knox, M.B., James Christie, M.D. Extra Dispensary Physician, William G. Dun, M.D. Extra Dispensary Surgeon, J. C. Renton, M.B. Pathologist, Joseph Coats, M.D. Pathological Chemist, David Newman, M.B. Dispensary Surgeon for Diseases of the Ear, Thomas Barr, M.D., Dental Surgeon, James N. Brownlie, L.D.S. Medical Superintendent, John Alexander, M.D. Lady Superintendent, Miss E. Clyde. The hour of visit is 9 A.M. Operating days, Wednesday and Saturday. The Dispensary for out-patients is open daily at 2 P.M.

LOCK HOSPITAL. 81 Beds. Medical Officers, Drs James Dunlop and A. Patterson. In-patients, 456.

LYING-IN HOSPITAL AND DISPENSARY. 36 Beds; in-patients, 223; out-patients, 1139. Consulting Surgeon, Dr George Buchanan. Consulting Physician, Professor Leishman. Physicians-Accoucheur, Drs Samuel Sloan and Hugh Miller. Assistant Physicians-Accoucheur, Drs W. J. Brock and J. W. Anderson. Out-door Physicians, Drs J. Dunlop, J. Moir, T. F. Gilmour, W. Muir, and A. Sloan.

ROYAL ASYLUM FOR THE INSANE. About 550 patients. Physician-Superintendent, Dr David Yellowlees. Lectures on Mental Diseases during summer, alternately at the University and the Asylum.

EYE INFIRMARY. 75 Beds; 965 in-patients; 8521 out-patients annually. Consulting Surgeon, George Buchanan, M.D. Surgeons, Thomas Reid, M.D., Thomas S. Meighan, M.D., and Henry E. Clark, M.R.C.S. Assistant Surgeons, J. Crawford Renton, M.B., D. N. Knox, M.B., and J. Macfie, M.D.

DISPENSARY FOR SKIN DISEASES, 8 Elmbank Street. Physician, Professor

M'Call Anderson. Open Mondays and Thursdays at 4 P.M., for out-door patients. This Institution is in connexion with the Wards for Skin Diseases in the Western Infirmary, to which the more important cases are sent.

OPHTHALMIC INSTITUTION, 126 West Regent Street. Consulting Physician, Dr S. J. Moore. Acting Surgeon, Dr J. R. Wolfe. Acting Physician, Dr J. S. Cumming. Assistant-Surgeons, Andrew L. Bell and John M'Call. Open daily from 1 to 3 P.M. A Course of Lectures and Clinical Instruction during the Winter and Summer Sessions.

GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 241 Buchanan Street. 12 Beds. Hour of visit, 3 P.M. Out-patients seen at 4 P.M. Number of cases treated annually, 3000. During the Winter and Summer Sessions a Course of Practical Instruction in the Treatment of Ear Disease is given to the Students attending the Clinique. Senior Consulting Physician, Dr P. Stewart. Senior Consulting Surgeon, Dr James Morton. Consulting Dental Surgeon, Dr J. C. Woodburn. Consulting Surgeon for Throat Diseases, Dr D. Foulis. Drs A. K. Irvine, A. L. Kelly, and J. Gardiner; Surgeon and Lecturer, Dr James Patterson Cassells.

The **HUNTERIAN MUSEUM** is open to Students of Medicine, for purposes of study, on presenting their matriculation tickets.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 300 Beds. Visits daily at 12 o'clock. Physicians, Drs Smith-Shand, Beveridge, and Fraser. Surgeons, Drs Pirrie, A. Ogston, Will, Garden, and Hall. Ophthalmic Surgeon, Dr Davidson. Pathologist, Dr Rodger. Chloroformist, Dr P. Blaikie Smith. Dental Surgeon, Mr Williamson.

GENERAL DISPENSARY, LYING-IN AND VACCINE INSTITUTION. 7000 patients annually. Open daily.

CHILDREN'S HOSPITAL. Physicians, Drs Stephenson and Garden. Clinical instruction daily at 11 o'clock.

LUNATIC ASYLUM. Above 500 patients.

EYE INSTITUTION, General Dispensary Buildings, Guestrow. Open three days in the week at 2.30 P.M. Clinical Instruction on Diseases of the Eye and the use of the Ophthalmoscope. Average, 600 patients annually.

ARMY MEDICAL DEPARTMENT.

6 WHITEHALL YARD, S.W.

We are informed by the Director-General that a revised Schedule, regulating the conditions of entrance to and service in the Army Medical Department, is in course of preparation; it will therefore be understood that the following information concerning the Department may shortly be changed.

SCHEDULE OF QUALIFICATIONS NECESSARY FOR CANDIDATES DESIROUS OF OBTAINING COMMISSIONS IN THE ARMY MEDICAL DEPARTMENT.

1. Every candidate for a commission in the Army Medical Department must be 21 years of age and not over 28 years at the date of commencement of the competitive examination. He must produce an extract from the Register of his birth, or, in default, a declaration, made before a magistrate by one of his parents or guardians, giving his exact age. He must also produce a recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in *every* respect to prove creditable to the Department if a commission be granted; and also a certificate of moral character from the parochial clergyman, if possible.

2. The candidate must sign a declaration upon honour that both his parents

are of unmixed European blood, and that he labours under no mental or constitutional disease, nor has any hereditary tendency thereto, nor any imperfection or disability that can interfere with the efficient discharge of the duties of a medical officer in any climate: also that he does not hold, and has never held, any commission or appointment in the public services. His physical fitness will be determined by a Board of Medical Officers, who are required to certify that the candidate's vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists. The Board must also certify that he is free from organic or other disease, and from constitutional weakness, or tendency thereto, or other disability of any kind likely to unfit him for military service in any climate.

3. Certificates of age, registration of diplomas, etc., and of character, must accompany the declaration when signed and returned.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—*a.* Anatomy and Physiology, 1000; *b.* Surgery, 1000; *c.* Medicine, including Therapeutics, the Diseases of Women and Children, 1000; *d.* Chemistry and Pharmacy, and a practical knowledge of drugs, 100. [*N.B.*—The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of Medical and Surgical patients at the bedside.] The eligibility of each candidate for the Army Medical Service will be determined by the result of the examination in these subjects only. Examinations will also be held in the following voluntary subjects, for which the maximum number of marks will be—French and German (150 each), 300; Natural Sciences, 300. The knowledge of Modern Languages being considered of great importance, all intending competitors are urged to qualify in French and German. The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to Materia Medica. The number of marks gained in both the voluntary subjects will be added to the total number of marks obtained by those who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of modern languages and natural sciences.

5. After passing this examination, every qualified candidate will be required to attend one course of practical instruction at the Army Medical School as a probationer on—(1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service.

6. All candidates will be required to conform to such rules of discipline as the Senate may from time to time enact, and they will be required to provide themselves with uniform, viz., the regulation undress uniform of a surgeon, but without sword.

7. They will be required to attend the A. M. D. Mess at Netley, and to conform to the Rules and Regulations thereof.

The following Extracts regarding "First Appointments" and "Rank and Pay," from the Royal Warrant of 27th November 1879, in Special Army Circular of 2nd December 1879, are republished for the information of Candidates for Commissions in the Army Medical Department.

FIRST APPOINTMENTS.

Every candidate for appointment in the Army Medical Department shall possess two diplomas or licenses, recognised by the General Medical Council, one to practise Medicine, and the other Surgery, and shall be registered under the Medical Act in force in the United Kingdom at the time of his appointment.

A public and open competition shall be held twice in the year for the admission of qualified candidates as probationers. The number of appointments so competed for shall be not less than half of the number of vacancies which shall have arisen in the last completed half-year ending on the 30th June or 31st December.

Not less than half the number of vacancies shall be filled up by competition, and it shall be competent for our Secretary of State to fill up the remaining number from such qualified candidates as may be proposed by the governing bodies of Public Schools of Medicine in our United Kingdom or in our Colonies as he may think proper. Every candidate so proposed shall be certified by the governing body proposing him to be duly qualified according to a standard to be laid down by our Secretary of State, and shall be approved by the Director-General.

A Surgeon on probation shall on appointment be sent to some large station for instruction in Ambulance and Hospital Corps duties, until the commencement of the next course of study at the Army Medical School. After passing through such course at the Army Medical School as our Secretary of State shall decide, the Surgeon on probation, after passing a qualifying examination in the military medical subjects taught there, and satisfying the Director-General that he is a person of proper skill, knowledge, and character, for permanent appointment in the Army Medical Department, shall be commissioned as Surgeon.

The Surgeons on probation who pass out of the Army Medical School at one qualifying examination shall take precedence among each other as Surgeons, as follows:—(*a*.) Those appointed on nomination according to their date of joining on probation. (*b*.) Those appointed on competition according to the last day of the competitive examination, and in the order of merit at such examination, with priority over any joining under sub-section (*a*) on the last day of the competitive examination.

A Surgeon's commission shall bear the date of the day of his passing out of the Army Medical School.

RANK AND PAY.

The ranks and daily rates of pay of the officers of the Army Medical Department shall be as follows:—Surgeon-General £2, after twenty-five years' service £2, 5s., after thirty years' service £2, 7s., after thirty-five years' service £2, 10s.; Deputy Surgeon-General £1, 10s., after twenty-five years' service £1, 12s., after thirty years' service £1, 15s., after thirty-five years' service £1, 17s.; Surgeon-Major, on appointment £1, after five years' service as such £1, 5s.; Surgeon, on appointment £250 a year, after ten years' service 17s. 6d. daily. Charge pay: the principal medical officer of an army in the field, consisting of 10,000 men and upwards, £1 daily; of 5000 men and upwards, 15s. daily; of less than 5000, 10s. daily. The principal medical officer of a colony where the number of commissioned officers and enlisted men is 1500 and upwards, 5s. daily.

The pay of medical officers shall be issued monthly in arrear.

The relative rank of officers of the Army Medical Department shall be as follows:—I. A Surgeon-General and Director-General shall rank as Major-General. II. A Deputy Surgeon-General shall rank as Colonel. III. A Surgeon-Major shall rank as Major; after twenty years' service as Surgeon-Major he shall rank as Lieutenant-Colonel. IV. A Surgeon shall rank as Captain. V. A Surgeon on probation shall rank as Lieutenant.

NON-EFFECTIVE PAY.

The daily rates of retired pay or half-pay for Medical Officers shall be as follows:—Surgeon-General, after thirty years' service, £1, 17s. 6d; twenty-five years, £1, 13s. 6d.; twenty years, £1, 10s. Deputy Surgeon-General, after thirty years, £1, 5s. 6d.; twenty-five years, £1, 2s. 6d.; twenty years, £1, 1s. Surgeon-Major, after twenty-five years, £1; twenty years, 16s. 6d.; fifteen years, 13s. 6d.; twelve years, 11s. Surgeon and Surgeon-Major, after ten years' service, receive a gratuity of £1000.

ARMY MEDICAL SCHOOL.

ROYAL VICTORIA HOSPITAL, NETLEY.

President of the Senate.—Sir William M. Muir, K.C.B., M.D., Director-General of the Army Medical Department.

Members of the Senate.—Sir J. Fayrer, M.D., K.C.S.I., F.R.S., Physician to the Council of India; Surgeon-General T. Longmore, C.B., Professor of Military Surgery; Surgeon-General W. C. Maclean, M.D., C.B., Professor of Military Medicine; William Aitken, M.D., F.R.S., Professor of Pathology; F. S. B. F. De Chaumont, M.D., F.R.C.S.E., F.R.S., Surgeon-Major, Professor of Military Hygiene; The Principal Medical Officer, Royal Victoria Hospital, Netley.

Assistant Professors.—Surgeons-Major H. R. L. Veale, M.D., W. R. Tobin, J. P. H. Boileau, M.D., and J. L. Notter, M.D.

Candidates for Commissions in the Army, and in the Queen's Indian Service, proceed to Netley after passing the Examination at London. At Netley they attend the Medical and Surgical Practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic Laboratory and Microscopical Room. The lectures and practical instruction are intended to explain the specialities of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field during action and sieges, means of transport, field hospitals; tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body, and practical points of a like kind.

INDIAN MEDICAL SERVICE.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR THE APPOINTMENT OF SURGEON IN HER MAJESTY'S INDIAN MEDICAL SERVICE.

1. *Limits of Age.*—All natural-born subjects of Her Majesty, between 22 and 28 years of age at the date of the examination, and of sound bodily health, may be Candidates. They may be married or unmarried. They must possess a Diploma in Surgery, or a license to practise it, as well as a Degree in Medicine, or a license to practise it in Great Britain or Ireland.

2. *Declaration to be submitted.*—They must subscribe and send in to the Military Secretary, India Office, Westminster, *so as to reach that address at least a fortnight before the date fixed for the Examination*, a declaration according to a prescribed form.

3. This declaration must be accompanied by the following documents:—

a. Proof of age, either by extract from the register of the parish in which the Candidate was born, or, where such extract is unattainable, by his own declaration (pursuant to the Act 5 & 6 Will. 4, c. 62), form of which can be obtained at the India Office. A certificate of baptism which does not afford proof of age will be useless.

b. A certificate of moral character from a magistrate, or a minister of the religious denomination to which the Candidate belongs, who has personally known him for at least the two years preceding the date of his application.

c. A certificate of registration, in accordance with the Medical Act of 1858, of the degrees, diplomas, and licenses possessed by the Candidate.

4. *Physical Examination.*—The physical fitness of Candidates will be determined previous to examination by a Board of Medical Officers, who are re-

quired to certify that the Candidate's vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia would not be considered a disqualification, provided it did not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes existed.

Every Candidate must also be free from organic disease of other organs, and from constitutional weakness, or other disability likely to unfit him for military service in India.

5. *Subjects for Examination.*—On producing the foregoing qualifications, the Candidate will be examined by the examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows :—

	Marks.
a. Anatomy and Physiology, ...	1000
b. Surgery, ...	1000
c. Medicine, including Therapeutics, the Diseases of women and children, ...	1000
d. Chemistry and Pharmacy, and a practical knowledge of Drugs,	100

(The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside.)

6. The eligibility of each Candidate for the Indian Medical Service will be determined by the result of the examinations in these subjects only.

7. *Voluntary Examination.*—Candidates who desire it will be examined in French, German, and, Hindustani, Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to Materia Medica.

8. The number of marks gained in these subjects will be added to the total number of marks obtained in the obligatory part of the examination by Candidates who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of modern languages and natural sciences.

9. The maximum number of marks allotted to the voluntary subjects will be as follows :—

French, German, and Hindustani (150 each), ...	450
Natural Science, ...	300

10. *Text-Books.*—The subjects for this part of the examination will be taken from the following books :—

Animal Kingdom, by W. S. Dallas, F.L.S.

Outlines of the Structure and Functions of the Animal Kingdom, by Rymer Jones; or *Cours Elémentaire d'Histoire Naturelle*, par Milne Edwards.

Lindley's *School Botany*, Lindley's *Medical and Economic Botany*, Henfrey's *Elementary Course of Botany*.

Elements of Natural Philosophy, by Golding Bird and C. Brooks.

Physical Geography, by Mrs Somerville.

11. The Examiners in London will prepare a list in order of merit, with the marks affixed in the different subjects, to be transmitted to the Director-General and communicated to the Professors of the Army Medical School. If any Candidate is found to be deficient in any particular subject, this shall be stated, in order that he may receive special instruction on the point at Netley.

12. *Course at Netley.*—After passing the preliminary examination, Candidates will be required to attend one entire course of practical instruction at the Army Medical School, before being admitted to examination for a commission, on—

(1.) Hygiène.
(2.) Clinical and Military Medicine.
(3.) Clinical and Military Surgery.
(4.) Pathology of Diseases and Injuries incident to Military Service.

These courses are to be of not less than four months' duration; but Candidates who have already gone through a course at Netley as Candidates for the Army or Navy Medical Service may, if thought desirable, be exempted from attending the School a second time.

13. *Pay and Uniform while at Netley.*—During the period of his residence at the Army Medical School, each Candidate will receive an allowance of 8s. per diem with quarters, or, when quarters are not provided, with the usual lodging and fuel and light allowances of subalterns, to cover all costs of maintenance; and he will be required to provide himself with uniform (viz., the regulation undress uniform of a Surgeon of the British Service, but without the sword).

14. All Candidates will be required to conform to such rules of discipline as the Senate may from time to time enact.

15. *Examination at Netley.*—At the conclusion of the course, Candidates will be required to pass an examination on the subjects taught in the School. The examination will be conducted by the Professors of the School.

The Director-General, or any Medical Officer deputed by him, may be present and take part in the examination. If the Candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a Commission as Surgeon.

16. *Position on List of Surgeons, how determined.*—The position of the Candidates on the list of Surgeons will be determined by the combined results of the preliminary and of the final examinations, and, so far as the requirements of the service will permit, they will have the choice of Presidency in India according to their position in that list.

INDIA OFFICE, *May* 1881.

N.B.—The examinations for admission to the Indian Medical Service usually take place twice a year, viz., in February and in August.

MEMORANDUM REGARDING THE POSITION OF MEDICAL OFFICERS TO BE APPOINTED TO HER MAJESTY'S INDIAN FORCES.

India Office, May 1881.

1. The regulations are those in force at the present time. They are subject to any alteration that may be determined on.

2. *Passage to India.*—Passage allowance to India on appointment will be given, or a passage provided. When passages are provided on board the Indian troop-ships, a charge for messing will be made at the rate laid down in the Royal Passage Warrant of 1st April 1879—viz., 2s. a day. Wine and beer are not included in the mess, but when provided are charged for as extras.

3. All Surgeons who shall neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of leaving Netley, will be considered as having forfeited their appointment, unless special circumstances shall justify a departure from this regulation.

4. *Pay previous to Embarkation.*—Pay at the rate of 10s. a day will be allowed from date of passing final examination at the Army Medical School, until date of embarkation when a passage is provided, or for a period of two months when the Surgeon is permitted to make his own arrangements for passage. An advance of two months' pay will also be made on embarkation.

5. *Grades and Relative Rank.*—The grades of Medical Officers in the Indian Military Forces are five in number, viz.:—

1. Surgeon-General, ranking as Major-General, according to the date of his commission.
2. Deputy Surgeon-General, as Colonel, according to the date of his commission.
3. Brigade Surgeon, as Lieutenant-Colonel, according to the date of his commission, or according to the date upon which he completed twenty years' service as Surgeon and Surgeon-Major.

4. Surgeon-Major, as Major, according to the date of his commission; and after twenty years' service as Surgeon and Surgeon-Major, as Lieutenant-Colonel.

5. Surgeon, as Captain, according to the date of his commission.

6. *Promotion.*—A Surgeon is promoted to Surgeon-Major on completion of twelve years' service from date of first commission.

7. In cases, however, of emergency, or when the good of the service renders such alteration desirable, it is competent for the Secretary of State for India, on the recommendation of the Viceroy and Governor-General of India in Council, to shorten the period of service above mentioned, in such manner as he shall deem fit and expedient.

8. All promotion from the rank of Surgeon-Major to that of Brigade Surgeon, from the rank of Brigade Surgeon to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, is given by selection for ability and merit.

9. On appointment as Honorary Physician or Honorary Surgeon to Her Majesty, an officer below the rank of Deputy Surgeon-General shall be promoted to that rank.

10. Time passed on half-pay will in no case be reckoned as service in calculating claims for promotion.

11. *Tenure of Office in Administrative Grades.*—The tenure of office of Surgeons-General and Deputy Surgeons-General is limited to five years.

12. Deputy Surgeons-General, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade, or for employment in the higher grade of Surgeon-General by promotion thereto.

13. Absence on leave in excess of six months on medical certificate, or of four months on private affairs, involves forfeiture of appointment.

14. *Pay and Allowances when in India.*—Officers who may hereafter be appointed to the Indian Medical Service will receive pay in India according to the following scale:—

Rank.	Years' Service.	Pay and Allowances per Mensem.		
		R.	A.	P.
Brigade Surgeon and Surgeon-Major.	25	888	12	0
„ . .	20	852	3	7
„ . .	15	677	6	11
„ . .	12	640	14	6
Surgeon . . .	10	410	9	5
„ . . .	6	392	5	2
„ . . .	5	304	14	2
„ . . .	under 5	286	10	0

15. On first appointment they will only come into receipt of Indian pay and allowances from the date of their arrival in India.

16. The monthly salaries of the principal administrative and military appointments are fixed at the following consolidated sums:—Surgeon-General, Bengal, Rs. 2700; Madras, Rs. 2500; Bombay, Rs. 2500; Deputy Surgeon-General, two at Rs. 2250, others Rs. 1800; Brigade Surgeon or Surgeon-Major, of twenty years'service and upwards, in charge of Native regiments, Rs. 1000, with Rs. 90 horse allowance in Cavalry regiments; Brigade Surgeon or Surgeon-Major in charge of Native regiments, Rs. 800, with Rs. 90 horse allowance in Cavalry regiments; Surgeon, above five years' full-pay service, in charge of Native regiments, Rs. 600, with Rs. 60 horse allowance in Cavalry regiments;

Surgeon, under five years' full-pay service, in charge of Native regiments, Rs. 450, with Rs. 60 horse allowance in Cavalry regiments.

17. The salaries of other medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 1800 to Rs. 400 per mensem.

18. Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

19. A medical officer will, however employed, be restricted to the rate of pay laid down in para. 14, until he shall have passed the examination in Hindustani, known as the "Lower Standard."

20. Surgeons-General and Deputy Surgeons-General, on vacating office at the expiration of the five years' tour of duty, will be permitted to draw *in India* respectively an unemployed salary of Rs. 1200 per mensem in the former, and Rs. 900 in the latter case, for a period of six months from the date of their vacating office, after which they will be placed while unemployed on the following scale of pay:—Surgeon-General, after thirty years' service on full-pay, £2, 5s.; after twenty-five years' service on full-pay, £2, 5s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £2; Deputy Surgeon-General, after thirty years' service on full-pay, £1, 14s.; after twenty-five years' service on full-pay, £1, 10s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £1, 8s.

21. *Furloughs.*—An officer will be eligible for one year's furlough on the completion of five years' actual service in India, and for an additional year after each subsequent five years' service.

22. While on furlough under the above rule an officer will receive half the emoluments of his office, but will not draw more than £1000 or less than £250 per annum.

23. Upon certificate of a Medical Board, an officer not entitled to furlough, if he has served not less than two years in India, may receive it for any period not exceeding two years.

24. Officers of the Administrative Grades are entitled during their tenure of appointment to six months' leave of absence on sick certificate, or four months' leave on private affairs.

25. *Honours and Rewards.*—Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath, and for good service pensions.

26. Six of the most meritorious officers are named Honorary Physicians, and six Honorary Surgeons to Her Majesty.

27. *Retiring Pensions and Half-Pay.*—Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—After thirty years' service in India, £700; after twenty-five years' service in India, £500; after twenty years' service in India, £365; after seventeen years' service in India, £292.

28. Time of service for pension will reckon from date of arrival in India. The period of residence at the Army Medical School will also reckon as service for the above pension, except in the cases of officers who have gone through the course at Netley as candidates for the British Army or Navy Medical Service.

29. A Surgeon-General, after five years' active employment in India in that grade, will be entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

30. A Deputy Surgeon-General will, after five years' active employment in India in that grade, be entitled to retire upon a pension of £250 per annum, in addition to the pension to which he may be entitled under the above scale.

31. In each of the above cases in paras. 29 and 30, six months' absence on medical certificate will be allowed to count towards actual service in those grades.

32. A Surgeon-General or Deputy Surgeon-General who has completed his term of service and has reverted to British pay, may reside in Europe, at the ame time qualifying for higher pension.

33. With a view to maintain the efficiency of the service, all medical officers of the rank of Brigade-Surgeon and Surgeon-Major shall be placed on the Retired List when they shall have attained the age of fifty-five years, and all Surgeons-General and Deputy Surgeons-General when they shall have attained the age of sixty years. In any special case, where it would appear to be for the good of the service that the officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

34. A medical officer retiring after a service of twenty years and upwards may, if recommended for the same by the Government of his Presidency, receive a step of honorary rank, but without any consequent increase of pay.

35. Medical officers not entitled to pension, but who, at the expiration of two years' leave of absence on medical certificate, are unfit to return to duty, will be placed on temporary or permanent half-pay, after examination by the Medical Board at the India Office. The half-pay granted in such a case will be the British rate of half-pay of the relative rank held by the officer:—Brigade Surgeon or Surgeon-Major of twenty years' service ranking with Lieutenant-Colonel, 11s. per day; Surgeon-Major, ranking with Major, 9s. 6d. per day; Surgeon, ranking with Captain, 7s. per day. Officers cannot retire *in India* on half-pay (No. 54, 28th February 1865).

36. The period passed on half-pay will in no case be reckoned as service in calculating claims for promotion or to pension on retirement.

37. *Wound Pensions.*—Medical officers are entitled to the same allowances granted to Her Majesty's Indian Military Forces on account of wounds and injuries received in action as combatant officers holding the same relative rank.

38. *Family Pensions.*—The claims to pension of widows and families of medical officers shall be treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being. (The Royal Warrant of 1st May 1878 is the one now in force.)

39. The widows and families of medical officers are also entitled to pensions from the Indian Service Family Pension Fund, to which all Surgeons must, as a condition of their appointment, subscribe from the date of their arrival in India.

NAVY MEDICAL DEPARTMENT.

Admiralty, 44 Spring Gardens, London, S.W.

REGULATIONS FOR ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

1. Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day that he presents himself for examination. He must produce a certificate from the district registrar of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth. He must also produce a certificate of moral character, signed by a clergyman or a magistrate to whom he has been for some years personally known, or by the president or senior professor of the college at which he was educated.

2. He must be registered, under the Medical Act in force at the time of his appointment, as possessing two diplomas or licences recognised by the General Council, one to practise medicine and the other surgery in Great Britain and Ireland.

3. He must be free from organic disease, and will be required to make a declaration that he labours under no mental or constitutional disease or weakness, or any other imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer in any climate.

His physical fitness will be determined by a board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

He must also declare his readiness to engage for general service at home or abroad as required.

4. Candidates will be examined by the Examining Board in the following subjects:—Anatomy and Physiology; Surgery; Medicine, including Therapeutics and the Diseases of Women and Children; Chemistry and Pharmacy, and a practical knowledge of Drugs. (The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of Surgical Apparatus, and the examination of Medical and Surgical patients at the bedside.)

The eligibility of each candidate will be determined by the result of the examinations in these subjects only.

Candidates who desire it will be examined in Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to Materia Medica, also in French and German; and the number of marks gained in these subjects will be added to the total number of marks obtained in the obligatory part of the examination by candidates who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of Natural Science and Modern Languages.

5. Every candidate, immediately after passing this examination, will receive a Commission as a Surgeon in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, etc., at Haslar Hospital.

The full and half-pay per day of Naval Medical Officers is in accordance with the following scale:—FULL-PAY: Surgeon—On entry, 11s. 6d.; after 4 years' full-pay service, 13s. 6d.; after 8 ditto, 15s. 6d. Staff Surgeon—On promotion, £1, 1s.; after 4 years' full-pay service in rank, £1, 4s. Fleet Surgeon—On promotion, £1, 7s.; after 4 years' full-pay service in rank, £1, 10s.; after 8 ditto, £1, 13s. Deputy Inspector General, £2, 2s. Inspector General, £2, 15s. On first appointment to the service, medical officers will receive full pay from date of appointment, but subject to the provisions of Art. 1255, clause 2, of the Queen's Regulations, 1879. HALF-PAY: Surgeon—Under 2 years' full-pay service, 6s.; after 2 years' full-pay service, 7s.; after 4 ditto, 8s.; after 6 ditto, 9s.; after 8 ditto, 10s.; after 10 ditto, 11s. Staff Surgeon—On promotion, 12s.; after two years' full-pay service in rank, 13s.; after 4 ditto, 14s.; after 6 ditto, 15s. Fleet Surgeon—On promotion, 17s.; after two years' full-pay service in rank, 18s.; after 4 ditto, 19s.; after 6 ditto, £1. Deputy Inspector General—On promotion, £1, 5s.; after 2 years' full-pay service in rank, £1, 7s.; after 4 ditto, £1, 9s. Inspector General, £1, 18s.

PRELIMINARY EXAMINATIONS for the DIPLOMAS of the ROYAL COLLEGES of PHYSICIANS and SURGEONS of EDINBURGH, during the Year 1881–82.

I. The *Preliminary Examination* in *General Education* for the Double Qualification in Medicine and in Surgery conferred conjointly by the Royal Colleges of Physicians and Surgeons, and also for the separate Diploma of each College, for October 1881, will embrace the following subjects:—

1. *English Language*, including Grammar and Composition.
2. *Arithmetic*, including Vulgar and Decimal Fractions.
3. *Algebra*, including Simple Equations.
4. *Geometry;* First two books of Euclid.

5. *Latin;* Cicero de Naturâ Deorum; Virgil, Æneid, Book II.
6. One of the following subjects at the option of the candidate: (1.) *Greek;* (2.) *French;* (3.) *German;* (4.) *Natural Philosophy*, including Mechanics, Hydrostatics, and Pneumatics.

II. In *Latin*, besides translation from one of the books above prescribed, the examination will include grammar, translation of a passage from an unprescribed author, and translation of a passage from English into Latin, the more difficult words being supplied.

In *Greek*, the books prescribed are, Xenophon's Anabasis, Book III., and Homer's Iliad, Book III. Besides translation from both these, parsing, derivation of English words from Greek, and translation of a passage from English into Greek are required.

In *French*, the book prescribed is Molière, Les Femmes Savantes. Parsing and translation from English into French are also required.

In *German*, the book prescribed is Schiller's Maria Stuart. Parsing and translation from English into German are also required.

Natural Philosophy, as defined above, corresponds to *Mechanics* in the Preliminary Examination of the University of Edinburgh.

III. The examinations will be held in the Hall of the Royal College of Physicians, 9 Queen Street, on the following days, beginning each day at twelve o'clock:—Saturday, 15th October, and Monday, 17th October, 1881. The subjects of the first day's examination will consist of English, Latin, and Geometry; and those of the second day, of Arithmetic, Algebra, and the optional subjects.

IV. *The Preliminary Examination* in *General Education during the year* 1882 will embrace the following subjects:—

1. *English Language*, including Grammar and Composition; *English History; Modern Geography*.
2. *Arithmetic*, including Vulgar and Decimal Fractions.
3. *Algebra*, up to and including Simple Equations.
4. *Geometry*, First two books of Euclid, or the subjects thereof.
5. *Latin*, including Translation and Grammar.
6. *Elementary Mechanics of Solids and Fluids*, comprising the Elements of Statics, Dynamics, and Hydrostatics. *Note.*—This subject may be passed at any period previous to the first Professional Examination.
7. *Optional Subjects*, of which one only is required to be passed: (1) *Greek;* (2) *French;* (3) *German.*

V. The Examination in *English History* will embrace the period from 1714 to 1815 inclusive; and in *Modern Geography*, the Geography of Great Britain, and the principal Physical Features and Political Divisions of Europe.

In *Latin*, the books prescribed are Livy, Book I.; and Horace, *Epistles*, Book I. Besides translations from either of these at the choice of the candidate, the examination will include Grammar, translation of a passage from an unprescribed author, and translation of a passage from English into Latin, the more difficult words being supplied.

In *Greek*, the books prescribed are Herodotus, Book II.; Euripides, *Medea.* Besides translations from either of these, at the choice of the candidate, parsing, derivation of English words from Greek, and translation of a passage from English into Greek are required.

In *French*, the book prescribed is About, *La Mère de la Marquise.* Parsing and translation from English into French are also required.

In *German*, the book prescribed is Goethe, *Egmont.* Parsing and translation from English into French are also required.

VI. The Examinations during 1882 will be held in the Hall of the College of Physicians, 9 Queen Street, on the following days, beginning each day at

1 P.M.:—Tuesday, April 11th, Wednesday, April 12th, and Thursday, April 13th; Friday, July 7th, Saturday, July 8th, and Monday, July 10th; and on Saturday, October 14th, Monday, October 16th, and Tuesday, October 17th. The subjects of the first day's Examination will consist of English, History, Geography, and Latin; of the second day's Examination, Arithmetic, Algebra, and Geometry; and of the third day's Examination, of Elements of Mechanics, and the optional subjects.

VII. Each candidate shall pay a fee of Ten Shillings previous to the examination; and, in the event of his being unsuccessful, he shall pay a fee of Five Shillings for each subsequent examination at which he is present.

Candidates are required to give their names and pay their fees to the officer of the Royal College of Physicians not less than two days prior to the day of the examination. Candidates at a distance should send their fees by post-office order, which should be made payable to John Broome, Officer, Royal College of Physicians, Edinburgh.

VIII. The examinations will be conducted according to the following regulations:—

1. The competence of the candidate will be ascertained by means of written exercises.
2. Each candidate must fill up a form (to be obtained from the officer) giving his name, place of birth, and an address that will find him by post, distinctly written on it, and specifying the subjects in which he wishes to be examined.
3. The exercises on each of the subjects must, in every case, be written on separate papers; and the candidate must attach his signature to each sheet of his written paper, and on the outside when folded, before giving it in to those who superintend the examination.
4. Books must not be employed, nor may assistance be given by one candidate to another, during the examination. Those who violate this rule shall forfeit the right to a certificate.
5. The decision of the examiners will be intimated to each candidate as soon as possible. Those who pass the examination will receive certificates to that effect. In the case of those who are successful in part of the examination only, the subjects in which they have passed will be recorded, and they will not be again examined in the branch or branches in which they have been successful.

IX. A certificate of having passed all the required subjects of the above examination entitles the possessor, on commencing Medical Study, to be registered as a Medical Student in the form required by the regulations of the General Medical Council, and, provided the candidate passes in three books of Euclid, is also admitted *pro tanto* by the Medical Faculty of the University of Edinburgh as an equivalent for the corresponding subjects of their Preliminary Examination for intending Graduates in Medicine.

A list of Examining Boards in the United Kingdom and in the Colonies, whose certificates are received *pro tanto* by the Royal Colleges, on the recommendation of the General Medical Council, will be found at page 353.

Frequent inquiries having been made as to the exact nature of the Preliminary Examination for the Diplomas of the Royal Colleges of Physicians and Surgeons of Edinburgh, the Secretaries have supplied the following papers, which were given out at the examinations in 1880:—

ENGLISH.

The candidate is required:—

1. To write a passage dictated by the examiner, with strict attention to spelling and punctuation.

2. To give the meaning and derivation of at least eight of the following words:—

Transference, Apparition, Subject, Performance, Controversy, Direction, Important, Fugitive, Consolation, Destruction, Eulogy, Triumvirate.

3. To give a grammatical analysis of the following sentence:—

"I may indeed venture to hope that such readers, if they follow me with no unkindly spirit through these pages, may find considerations of real weight and importance, which will solve imaginary difficulties and supply an answer to real objections."

4. To write a short essay on the following subject:—

"Iron, and its useful applications." (The chemistry of the subject not expected.)

[The essay need not exceed half a folio page.]

FRENCH.

Translate into English:—

Ariste.

Allez, c'est se moquer. Votre femme, entre nous,
Est, par vos lâchetés, souveraine sur vous.
Son pouvoir n'est fondé que sur votre faiblesse;
C'est de vous qu'elle prend le titre de maîtresse;
Vous-même à ses hauteurs vous vous abandonnez,
Et vous faites mener en bête par le nez.
Quoi! vous ne pouvez pas, voyant comme on vous nomme,
Vous résoudre une fois à vouloir être un homme,
A faire condescendre une femme à vos vœux,
Et prendre assez de cœur pour dire un Je le veux!
Vous laisserez, sans honte, immoler votre fille
Aux folles visions qui tiennent la famille,
Et de tout votre bien revêtir un nigaud,
Pour six mots de latin qu'il leur fait sonner haut;
Un pédant qu'à tout coup votre femme apostrophe
Du nom de bel esprit et de grand philosophe,
D'homme qu'en vers galans jamais on n'égala,
Et qui n'est, comme on sait, rien moins que tout cela!
Allez, encore un coup, c'est une moquerie,
Et votre lâcheté mérite qu'on en rie.

Chrysale.

Oui, vous avez raison, et je vois que j'ai tort.
Allons, il faut enfin montrer un cœur plus fort,
Mon frère.

2. Conjugate the following verbs: *prendre*, *voir*, *vouloir*, *condescendre*, *tenir*, *savoir*.

3. Write out in full the imperative of *se résoudre*.

4. Give the feminine of *garçon*, *gendre*, *neveu*, *cheval*, *âne*, *cochon*, *taureau*, *coq*.

5. Translate into French:

The simplicity of this rural (*champêtre*) life did me a good of inestimable price, in opening my heart to friendship. Till then I had only known sentiments elevated, but imaginary. The custom of living together in a peaceful state united me tenderly to my cousin William. In a short time I had for him sentiments more affectionate than those which I had had for my brother, and which have never been effaced.

GERMAN.

1. Translate into English :—

Maria (mit ruhiger Hoheit im gansen Kreise herumsehend).
Was klagt ihr? Warum weint ihr? Freuen solltet
Ihr euch mit mir, dass meiner Leiden Ziel
Nun endlich naht, dass meine Bande fallen,
Mein Kerker aufgeht, und die frohe Seele sich
Aus Engelsflügeln schwingt zur ew'gen Freiheit.
Da, als ich, in die Macht der stolzen Feindin
Gegeben war, Unwürdiges erduldend,
Was einer freien, grossen Königin
Micht ziemt, da war es Zeit, um mich zu weinen!
Wohlthätig, heilend nahet mir der Tod,
Der ernste Freund! Mit seinen schwarzen Flügeln
Bedeckt er meine Schmach—Den Menschen adelt,
Den tiefstgesunkenen, das letzte Schicksal.
Die Krone fühl' ich weider auf dem Haupt,
Den würd'gen Stolz in meiner edeln Seele!
(Indem fie einige Schritte weiter vortritt.)
Wie? Melvil hier?—Nicht also, edler Sir?
Steht auf! Ihr seid zu eurer Königin
Triumph, zu ihrem Tode nicht gekommen.

2. Give the principal parts (first person singular present and impertect indicative, and past participle) of *fallen*, *aufgeht*, *schwingt*, *vortritt*, *gekommen*.

3. Decline throughout, *sein schwarse Flügel*.

4. Translate into German:

What o'clock is it? It is late, it is ten o'clock. It is fine weather to-day. It has frozen (*friern*) last night. It was very slippery (*glatt*); a man fell and has broken his leg (*Bein*). What is to be done? Send for the doctor.

GREEK.

I. Translate :—

(*Xenophon, Book III.*)

Ἐνταῦθα ἔμειναν ἡμέρας τρεῖς, καὶ τῶν τερωμένων ἕνεκα, καὶ ἅμα ἐπιτήδεια πολλὰ εἶχον, ἄλευρα, οἶνον, κριθὰς ἵπποις συμβεβλημένας πολλάς. ταῦτα δὲ συνηγμένα ἦν τῷ σατραπεύοντι τῆς χώρας. τετάρτῃ δ' ἡμέρᾳ καταβαίνουσιν εἰς τὸ πεδίον. Ἐπεὶ δὲ κατέλαβεν αὐτοὺς Τισσαφέρνης σὺν τῇ δυνάμει, ἐδίδαξε τοὺς Ἕλληνας τῇ ἀνάγκῃ κατασκηνῆσαι, οὗ πρῶτον εἶδον κώμην, καὶ μὴ πορεύεσθαι ἔτι μαχομένους. πολλοὶ γὰρ ἦσαν ἀπόμαχοι, οἱ τετρωμένοι, καὶ οἱ ἐκείνους φέροντες, καὶ οἱ τῶν φερόντων τὰ ὅπλα δεξάμενοι. Ἐπεὶ δὲ κατεσκήνησαν, καὶ ἐπεχείρησαν αὐτοῖς ἀκροβολίζεσθαι οἱ βάρβαροι πρὸς τὴν κώμην προσιόντες, πολὺ περιῆσαν οἱ Ἕλληνες. πολὺ γὰρ διέφερεν, ἐκ τῆς χώρας ὁρμῶντας ἀλέξασθαι, ἢ πορευομένους ἐπιοῦσι τοῖς πολεμίοις μάχεσθαι. Ἡνίκα δ' ἦν ἤδη δείλη, ὥρα ἦν ἀπιέναι τοῖς πολεμίοις. οὔ ποτε γὰρ μεῖον ἀπεστρατοπεδεύοντο οἱ βάρβαροι τοῦ Ἑλληνικοῦ ἑξήκοντα σταδίων, φοβούμενοι μὴ τῆς νυκτὸς [οἱ Ἕλληνες] ἐπιθοῖντο αὐτοῖς.

Parse *ἔμειναν*. Parse *τετρωμένων*. Parse *ἄλευρα*; from what verb is it derived? Parse *συνβεβλημένοι*. Parse *συνηγμένα*; give the first person singular of the second aorist active of this verb. Decline *ἡμέρᾳ* in the singular, dual, and plural. What English word comes from it? Parse *δυνάμει*. What English words are derived from it? Parse *ἀκροβολίζεσθαι*; give its derivation. Parse *μεῖον*. Parse *ἐπιθοῖντο*.

II. Translate :—

(*Iliad, Book II.*)

Ὣς φάτο, νεικείων Ἀγαμέμνονα, ποιμένα λαῶν,
Θερσίτης· τῷ δ' ὦκα παρίστατο δῖος Ὀδυσσεύς,
Καί μιν ὑπόδρα ἰδὼν χαλεπῷ ἠνίπαπε μύθῳ.
Θερσῖτ' ἀκριτόμυθε, λιγύς περ ἐὼν ἀγορητής,
Ἴσχεο, μηδ' ἔθελ' οἶος ἐριζέμεναι βασιλεῦσιν·
Οὐ γὰρ ἐγὼ σέο φημὶ χερειότερον βροτὸν ἄλλον

Εμμεναι, ὅσσοι ἅμ' Ἀτρείδῃς ὑπὸ Ἴλιον ἦλθον·
Τῷ οὐκ ἂν βασιλῆας ἀνὰ στόμ' ἔχων ἀγορεύοις,
Καί σφιν ὀνείδεά τε προφέροις, νόστον τε φυλάσσοις,
Οὐδέ τί πω σάφα ἴδμεν, ὅπως ἔσται τάδε ἔργα·
Ἢ εὖ, ἦε κακῶς, νοστήσομεν υἷες Ἀχαιῶν.
Τῷ, νῦν Ἀτρείδῃ Ἀγαμέμνονι, ποιμένι λαῶν,
Ἧσαι ὀνειδίζων, ὅτι οἱ μάλα πολλὰ διδοῦσιν
Ἥρωες Δαναοί· σὺ δὲ κερτομέων ἀγορεύεις.

Parse νεικείων. Parse ἀκριτόμυθε; give its derivation. Parse ἴδμεν. Parse κακῶς; give the corresponding adjective, and compare it. Parse νοστήσομεν. Compare μάλα. Parse and compare πολλά. Parse ἀγορεύεις.

III. Render into Greek the following English passage:

A dog, carrying meat, was crossing a river. Seeing his own shadow (σκιά) on the water, he supposed (ὑπολαμβανω) that it was another dog also carrying (κατεχω) meat; and, letting go (αφεις) his own, he thought (ορμαω) to take that of the other dog, but lost both.

IV. Give the Greek derivation of the following English words:

Dipsomania, Kleptomania, and Monomania; Zoophyte, Neophyte, Strategy, Economy, Anabaptist, Pædo-baptist, Phonograph, Telephon, Laity, Polytechnic, Panorama, Epitaph, Epigram, Epithet.

[The Candidate, in order to pass, must do all these numbers, and obtain 75 per cent. marks.]

ARITHMETIC.

The full work of every question must be given.

1. Calculate to 5 places of decimals the values of

$$1 + \frac{1}{2} + \frac{1}{2.3} + \frac{1}{2.3.4} + \frac{1}{2.3.4.5} + \frac{1}{2.3.4.5.6};$$

and of the square root of 0·8.

2. Find the values of $\frac{1\frac{1}{3} \text{ of } 1\frac{3}{5}}{\frac{7}{8} \text{ of } 1\frac{4}{7}}$ and $\frac{\frac{0·08}{1·35}}{\frac{1·2}{36·5}}$.

3. How many days from July 14th to October 27th, both inclusive?

4. What sum will increase by £100 in 3 years at 5 per cent. compound interest?

5. A man sells 3 per cents. at 81, and invests the proceeds in 3½ per cents. at 92. What is the percentage alteration of his income from the money?

6. A grocer buys two kinds of tea, one at 2s., the other at 2s. 6d. per pound. In what proportion must he mix them, so as to realize 20 per cent. profit by selling at 2s. 9d.?

7. Allowing 64 lbs. of water to a cubic foot, what is the weight of the contents of a bath 70 in. × 37 in. filled to a depth of 19 inches?

8. Show that any integral number of pounds up to 121 can be weighed by means of the five weights, 1, 3, 9, 27, and 81 lbs.

ALGEBRA.

The full work of every question must be given.

1. Find the values of:

$$\frac{(ly - mx)^2 + (mz - ny)^2 + (nx - lz)^2 + (lx + my + nz)^2}{l^2 + m^2 + n^2},$$

and $(x + y + z)(x - y + z)(x + y - z)(-x + y + z)$,

in their simplest forms.

2. Find the factors of $x^2 + \frac{1}{x^2} - \left(a + \frac{1}{a}\right)$.

3. Divide $1 - 3x^3 + 3x^6 - x^9$ by $1 - 2x + x^2$.

4. Extract the square root of
$$(1 + x^8) + 2x(1 + x^6) + 3x^2(1 + x^4) + 4x^3(1 + x^2) + 5x^4.$$

5. Solve the equations:

(α) $\frac{x - 3}{2x - 1} \cdot \frac{1 + 2a}{3 + a} = 1$.

(β) $(x + 5)^3 - (6 - x)^3 = 33$.

(γ) $(1 + x + x^2)^2 - (1 - x + x^2)^2 = 10(x^2 + 1)$.

6. One pipe can fill a water-barrel in an hour, another can fill it in two hours. The barrel is placed under the first for a certain time, then under the second for an equal time, then under both for the same time, and is filled. What is that time?

7. A, B, and C have each the same number of nuts. A gives B half of his and five more; B then gives C half of what he has and 10 more; C gives A half of what he has and 15 more. Then A has three times as many as at first. How many had each, and how many has he?

NATURAL PHILOSOPHY.

1. What is meant by velocity, and how is it measured? Taking the earth's radius as 4000 miles, what is the velocity of bodies at the equator in consequence of the diurnal rotation?

2. Explain the action of a hydraulic press.

3. If a stone be let fall, and three seconds afterwards another be thrown down with a velocity of 100 feet per second, when will it overtake the first?

4. Describe one form of Hydrometer, explain its use, and show how it can be graduated.

5. Why is greater pressure required to burst a small boiler than a large one of the same shape, both being made of the same boiler-plate? Give other illustrations of the same principle.

6. Enunciate the proposition called the "Parallelogram of Forces," and give a satisfactory proof of it.

7. A uniform force stops a train in one minute, and during that time the train runs 300 yards; what was the velocity of the train, and what ratio does the force bear to the weight of the train?

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

IODOFORM IN THE TREATMENT OF OZÆNA.—Dr Lennox Browne recommends the following treatment for ozæna:—After cleansing the nasal fossæ from crusts by means of lukewarm emollient injections or of weak solutions of the salicylate of soda (to be repeated several times a day), he applies the pomade by means of a brush, which is carried into the nose. The formula of the pomade is—

℞	Iodoformi,	grammes	iij. to iv.
	Ætheris,	„	xxx. to xl.
	Vaseline,	„	iij.
	Essentiæ rosæ,	gtt.	xv. to xx. M.

Under no condition should the nares be plugged with cotton. If the patient be scrofulous, he should have the iodide of potassium, the iodide of iron, and cod-liver oil. If there is a suspicion of syphilitic infection, by treating the diathesis you will be the more likely to overcome the ozæna.—*The Louisville Medical Herald*, June 1881.

IODOFORM AS A VERMIFUGE.—The *Philadelphia Medical and Surgical Reporter* for June 1881 states that Professor F. L. Sim of Memphis relates in the *Mississippi Valley Medical Monthly* for May a case of a young man who had been treated by iodoform for various affections of the nervous system, and for uneasiness about the neck of the bladder and disease of the prostate, all of which affections were greatly relieved. It was found that one grain of iodoform three times a day caused expulsion of several feet of tapeworm. It was subsequently found that whenever the iodoform was administered segments of the worm were expelled, and after a large dose of the oil of the male shield fern had expelled the remainder of the worm the patient completely recovered. Professor Sim concludes that iodoform will be useful in diagnosing the presence of tapeworm. In the same journal, suppositories of cocoa butter containing seven grains of iodoform are recommended for ascarides and other intestinal worms.

THE THERAPEUTICS OF GOLD.—Dr James L. Watson of Brooklyn, in the *New York Medical Tribune* for June, advocates gold in the treatment of various diseases, especially "headache of a congestive character, and throbbing, sore, aching pains, as if the brain were bruised;" "ozæna, with fetid discharge, and watery or pus-like discharge from the nostrils;" "melancholy, depression of spirits, with suicidal mania;" angina pectoris, palpitation, irregular and accelerated action of the heart from rheumatism, as well as syphilitic or other causes. He states that gold exercises a marked influence over the mucous surfaces throughout the body, and especially upon the urinary and generative organs. He recommends it for cystitis, strangury, lancinating pain in the urethra, incontinence of urine, and catarrh of the bladder. He speaks of it as a very important remedy in all syphilitic affections, and as an antidote to mercury. "The quantity to be prescribed for each dose may range from one-tenth of a grain to a much smaller quantity."

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

On the Behaviour of Chrysarobin when Taken or Applied Externally.—Lewin and Rosenthal have made investigations as to what becomes of chrysarobin when applied to the surface or given internally. They find that in rabbits, under both circumstances, it appears in the urine as chrysophanic acid, not all, however, undergoing this change. What is most important is, that when used as an external application it sets up irritation in the kidneys and albuminuria. They remark that, since this happens in animals, the possibility of its occurrence in men also must be borne in mind, and forms another reason why the remedy should not be applied to too extensive a surface at once.—*Virchow's Archiv*, July 1881.

The Therapeutical Applications of Preparations of Salve and Plaster Muslin.—One of the greatest practical benefits which we owe to Hebra in the treatment of skin diseases was his suggestion that ointments, instead of being merely smeared on the affected part, should be spread thickly on linen and kept closely applied by bandages. Unna, in the papers headed as above, carries this a step further. He gives a series of formulæ for ointments, which are spread by the chemist on muslin, and pieces or strips of this salve muslin are cut off and applied at once. The bases of all the salves are hog's lard and beef suet, singly or combined, and with one-tenth part of benzoic acid added to prevent their turning rancid. When the substance to be combined with these is a powder, it is first mixed with a little almond oil to dissolve it, and when a liquid, paraffin is added to render the ointment harder. To preserve a uniform firmness, two formulæ are given for each, one for winter, the other for summer. Sometimes a more adhesive material than a mere salve is better, and these he names plaster muslins; to these a little resin or other sticky substance is added. He claims simplicity and elegance for these. The prescriptions for some of them are as follows. The number first given is for cold, the second for warm weather salves.

1. *Lead Plaster Salve Muslin.*

Emplast. plumbi simp.,	10·10
Sevi benzoinati,	10·10
Adipis ,,	2·0

2. *Boric Lead Plaster Salve Muslin.*

Emplast. plumbi simp.,	8·9
Sevi benzoinati,	8·8
Acid boracic,	2·2
Ol. amygdal. dulc.,	2·1

3. *Chloral Camphor Salve Muslin.*

Sevi benzoinati,	90·95
Adipis ,,	5·0
Chloral camphor,	5·0

4. *Iodoform Salve Muslin.*

Sevi benzoinati,	90·95
Adipis „	15·10
Iodoform,	5·0

5. *White Precipitate Salve Muslin.*
10%.

Sevi benzoinati,	70·75
Adipis „	15·10
Hyd. ammoniat.,	10·10
Ol. amygdal. dulc.,	5·5

6. *Mercurial Salve Muslin.*
40%.

Hydrarg. depurat.,	37
Ung. hydrarg., Ph. G.,	10
Sevi benzoinati,	40
Adipis „	13

7. *Zinc Salve Muslin.*

Sevi benzoinati,	70·75
Adipis „	15·10
Zinci oxidi,	10·10
Ol. amygdal. dulc.,	5·5

8. *Iodide of Lead Plaster Muslin.*

Empl. adhesiv., P. Germ.,	85
Terebinthin. Venet.,	5
Plumbi iodidi,	5

9. *Mercurial Plaster Muslin.*

Hydrarg. vivi.,	10
Terebinthin.,	10
Emplast. plumb. simp.,	25
Resin. pini,	5

When a thicker layer of the application is desirable, two plies of the salve muslin can be placed on the part. It is well, too, to cover the salve muslin with a piece of ordinary muslin, which prevents the fatty matter coming through and soiling the clothes; and the salve muslin is so dispensed in Hamburg, and can be had from Mielek, apothecary, Dammthorstrasse there. Unna specially mentions the following as suitably treated by the prepared muslins:—

1. *Epididymitis Gonorrhoica, by means of Iodide of Lead Plaster Muslin.*—The treatment of this by Fricke's sticking-plaster has fallen into discredit because much pain and sometimes severe consequences, as gangrene, have been caused by it. This may be avoided, Unna says, by taking care not to fold the scrotum when putting the strip of plaster, above the enlarged testicle, round the neck of the scrotum. But the pliant muslin plaster suggested by him is much more efficacious, and can be resorted to as soon as the more acute stage has passed. Only, when the swelling is extremely tender to touch, he allows twenty-four hours' rest in bed, combined with ice-cold lead lotion, and then applies his plaster muslin and permits the patient to move about. The earlier absorption is secured

by this method the more certainly will subsequent induration of the epididymis be avoided.

2. *Treatment of Pigment Spots by Mercurial Salve Muslin.*—We can remove freckles or liver-spots, when not too deeply embedded in the cutis, by such means as cause an abnormally rapid desquamation of the cuticle. Of the weaker and more slowly acting means, borax holds the chief place, since this salt, when long continued as an application, is least apt to cause eczema. Of the stronger and more rapid in action, corrosive sublimate. By means of the salve muslin the desired result may be obtained more certainly and quickly than by the weak lotions; if not so rapidly, yet more comfortably, than by the use of corrosive sublimate, whether as lotion or collodion. The fatty material of the skin having been first removed by sponging with eau de Cologne at bedtime, pieces of the white precipitate or mercurial salve müslin, cut to suit the sizes of the pigment spots, are closely applied to them, and, if necessary, fixed by collodion, and washed off in the morning. During the day the spots may be concealed by a bismuth cosmetic:—

℞ Bismuthi oxychlorati
Kaolini ana 5·0
Vaselin, 20·0 M. P. ung.

When the maculæ are covered with this, a subsequent washing will not entirely remove it. Under the combined use of these mercurial and bismuth preparations the pigment spots disappear very quickly without much redness or desquamation.

Treatment of Eczema Narium by means of Zinc Muslin.—By this, eczema of the nostrils, so frequent an accompaniment of chronic nasal catarrh, can be well treated. A piece of indiarubber tubing ½ an inch long and ⅙ to ¼ of an inch in diameter, in proportion to the size of the nostril, is cut for each. Each is then enveloped in zinc muslin, sufficient being rolled round the tube to make it fit the nostril; the part which projects beyond the tube is cut into several strips, and these are folded over the margins of the nostrils to retain it in position. If the upper lip is hairless, the eczema found there is to be covered also with a piece of zinc muslin. If a moustache be worn, there is usually eczema with little infiltration, but with some sycosis. In such a case pencilling with a weak tar and sulphur ointment, 1 per cent., between the hairs will be found the best treatment. This method obviates the injurious effects of the secretions of the nose on the eczematous surface without interfering with respiration. The strips which fasten in the tubes are, in adults, only necessary at night. During the day the covered indiarubber tube can be retained *in situ* by a little care, and is scarcely noticeable. It is self-evident that one must do all one can to cure the nasal catarrh, not always an easy task. Unna finds, on the one hand, the genuine Hager's pills, on the other frequent inhalations of tar, aid him most. At night ol. rusei can be painted thickly over the zinc muslin which covers the upper lip.—*Berliner Klinische Wochenschrift*, 4th and 11th July 1881.

PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

A JUBILEE volume in commemoration of the twenty-fifth anniversary of Frederick Horner's professoriate in Zürich contains the following contributions by some of his former pupils:—

I. THE EFFECTS ON THE EYE OF DISTURBANCES IN THE CAROTID CIRCULATION (by Julius Michel).—The author, after referring to the cases on record in which visual disturbances have followed ligature of one or both carotids, proceeds to the description of the changes in intraocular circulation which he has observed at the time of their ligature in animals, and during their compression in man. Immediately on applying digital compression to the carotid of one side, the papilla of the same side is seen to become anæmic, and a decrease takes place in the breadth of both retinal and venous blood columns. This appearance, however, very rapidly gives place to an increased redness of the papilla, accompanied by venous engorgement. An exactly similar condition is produced if the arm of the same side be raised and held for some time above the head. Ligature of the carotid in dogs produces the same results. When ligatures are applied to both carotids, the changes occur in both eyes, are more marked and persistent, and resemble the appearances observable at the moment of death. The redness of the papilla is probably due to hyperæmia of its fine veins and capillaries, produced possibly by a certain amount of unavoidable pressure on the veins of the neck. It is also probably in some measure due to the diminished arterial pressure, as is seen in cases of chlorosis, etc. The connexion thus shown to exist between the circulation in the carotids and in the vessels of the eye renders it probable that any circulatory disturbance in the former, such as dilatation or thrombosis, would be likely to be followed by nutritional changes in the eye. Two cases which show that such may be the case are cited in full. In the first an intensely hyperæmic condition of the vessels of the fundus, with serous retinitis, in a girl of 15, seems to have stood in connexion with a condition diagnosed as aneurysmal dilatation of both carotids. In the second there was almost complete thrombosis of the right carotid in a man of 49, and in this case the visual disturbance was confined to the right eye (V = fingers at 5′, peripheral vision intact). As then important ocular changes may be expected as a result of serious and sudden circulatory changes in one or both carotids, it seems not impossible that slighter and more chronic changes in these vessels may be not without influence on the nutrition of the eyes. The existence of opacities of the lens must be looked upon as a symptom of local or general nutritional change, as is the case where cataract follows inflammation in the uveal tract or appears as a complication in diabetes. Of what general condition is the ordinary senile cataract to be regarded as constituting a symptom?

It cannot be said that most patients with senile cataract are in a condition of senile marasmus. In 53 cases of senile cataract the state of the circulatory system, especially in the carotids, was carefully examined, and it was found that these cases could all be arranged in one or other of the following groups:—

1. Unilateral cataract coexisting with sclerosis of the carotid on the same side alone, or at any rate proportionately more marked on that side (14 cases).
2. Bilateral cataract, the lenticular opacity having begun sooner on the side on which the sclerosis was greatest (21 cases).
3. Bilateral cataract, equally developed, or having begun at the same time, in which the sclerosis was equally marked in both carotids (9 cases).
4. Cataract coexisting with sclerosis of the carotid and swelling of the thyroid (8 cases).

All the cases are given in full. The author feels convinced that the coincidence of atheroma of the carotid and cataract is more than merely casual. Many of the cases of unilateral atheroma and cataract occurred in young individuals. Further, a considerable number of patients operated on by him for cataract subsequently died of apoplexy. The fact that after extraction of the cataract the retinal vessels showed no appearance of participation in the atheromatous process points to the connexion between atheroma of the carotid and cataract being a direct one.

II. ON SYMPATHETIC OPHTHALMIA (by Max Knies).—In connexion with this subject there are three considerations—1. The character of the inflammation in the first eye; 2. The form of the inflammation in the second eye, which is to be looked upon as undoubtedly sympathetic; and 3, The length of the period elapsing between the two inflammations. On the first point there are probably few who do not hold the view that a sero-plastic inflammation of the uveal tract is of summary causal importance. Alt's statistics show that in 95 per cent. there exists at the same time a scar on the sclerotic, indicative of a traumatic origin of such inflammation. On the second point opinions differ widely, greatly on account of insufficient attention being given to the difference between sympathetic irritation and sympathetic inflammation. The first must be looked upon as a neurosis involving the motor, sensory, and vaso-motor functions of the ciliary nerves, and, like other neuroses, is characterized by the fact that *cessante causa cessat effectus.* The true sympathetic inflammation is a sero-plastic neuritis, which, having once set in, resists all treatment. Knies admits no such classification into serous, malignant, and plastic forms as has recently been made by Mauthner, but maintains that the inflammation, though serous at first, all but invariably assumes successively these graver types, and ends only with destruction of the eye. Symptoms of irritation may begin at once and persist for long without interruption. The true inflammation seldom begins

before the end of the third week, so that every affection arising sooner than three weeks after the lesion in the first eye, or much later than three weeks after the enucleation of that eye, can only be admitted to be of the nature of sympathetic inflammation when there are very strong reasons for entertaining this view. With regard to the nature of the transference from one eye to the other, three theories are discussed—*first*, transference by the sheaths of the bloodvessels; *second*, by the ciliary nerves; and *third*, by the optic nerve. This last is the view supported by Knies; but it must be said that his arguments in favour of it are not of a very convincing nature.

Part Fifth.

MEDICAL NEWS.

List of Candidates who were successful for appointments as Surgeons in Her Majesty's British Medical Service at the Competitive Examination in London on the 15th August 1881.

No.	Name.	Marks.	No.	Name.	Marks.
1.	Reid, N. M.	2390	14.	Jerome, J. W.	1920
2.	Lewis, W. H. G.	2325	15.	Pike, W. W.	1875
3.	Dick, W.	2298	16.	Fitzgerald, M. E.	1870
4.	Jencken, F. J.	2141	17.	Truefitt, L. H.	1870
5.	Stuart, H. O.	2125	18.	Irwin, J. M.	1855
6.	Treherne, F. H.	2105	19.	Nealon, P. J.	1850
7.	Loughead, S. F.	2100	20.	Wight, E. O.	1840
8.	Haslett, J. C.	2075	21.	Morris, W. A.	1825
9.	Barratt, H. J.	2065	22.	Burton, F. H. M.	1810
10.	James, H. E. R.	2025	23.	Heath, J.	1805
11.	Trevor, H. O.	1990	24.	Nichol, C. E.	1805
12.	Russell, A. F.	1985	25.	Reckitt, J. D. T.	1805
13.	Fayle, R. J.	1971			

OBITUARY.

FREDERICK W. A. SKAE, M.D., F.R.C.S.E.

Dr **Frederick W. A. Skae**, Inspector of Lunatic Asylums and Hospitals for the Colony of New Zealand, died at Wellington on the 25th June 1881. He was the third son of the late Dr Skae of Morningside. He was educated at the University and the Medical School of Edinburgh, took his medical degree at St Andrews, on account of his father's connexion with that university, and afterwards took the fellowship of the Edinburgh College of Surgeons. After taking his degree he studied both in London and Paris. He was assistant-physician at Morningside Asylum to his father for some years, then received the appointment of Medical Superintendent of the Stirling Asylum at Larbert, which he held for about ten years, and was in 1876 appointed Medical Inspector of Lunatic Asylums to the

Colony of New Zealand—an appointment which he held till his death. Lately he had also been made Inspector of Hospitals for the colony.

Dr Frederick Skae inherited much of his father's ability as well as a great deal of his father's geniality. In addition, he had certain marked mental characteristics of his own which greatly endeared him to his friends. There was a quaint humour and originality about him that made him a charming companion. This often came out in his reports. He had also a gentleness of speech and demeanour, as well as of character, that made him much beloved by his patients. He really sympathized with the insane, and they instinctively felt this. He was large-minded and tolerant, and had too much of humanity ever to be a mere disciplinarian in his official dealings with his fellow-men. He never took up crotchets or ran to extremes in anything; but he did his medical and administrative work well, and was devoted to his profession. His reports to the Government of New Zealand were most able and thorough. They showed that he had grasped the needs of the colony in regard to the provision for its insane of all classes. In these reports he most clearly laid bare the abuses of the existing state of matters, and suggested remedies for them. He had prepared a comprehensive scheme to provide suitable accommodation for the insane of the whole colony. This would have been attended with some expense, and times were rather bad. His appointment originally had caused local jealousies. His fearless exposure of abuses and suppression of sinecures had made him enemies, and, as usual in a new colony, the Legislature was the field of attacks on him, while his reports were used by the opposition to damage the Government by showing that it had not carried out his urgent recommendations. In connexion with an investigation into the abuses of management of the Wellington Asylum, his enemies raised an outcry against him in a portion of the press, put pressure on the Government to terminate his appointment, and blamed him most unjustly for abuses that he had done his best to put an end to. It was not strong enough effectually to back its official, and it seemed, indeed, as if it wanted an excuse to get rid of a too independent officer. All these things told on his sensitive nature and harassed him greatly, depressing his vital energy, and causing him to succumb to an attack of erysipelas. There can be no doubt whatever that he was an earnest and able public servant, killed by the injustice and worry to which he was subjected during the last year of his life. He was too sensitive for the colony. A coarser and less upright man, after the type of the average colonial politician, would have suited them better.

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ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Sponge-Grafting.* By D. J. HAMILTON, M.B., F.R.C.S.E., etc., Pathologist to the Edinburgh Royal Infirmary; Lecturer on Pathology in the School of Medicine, Edinburgh.

IN a former paper ("On the Process of Healing," *Journal of Anatomy and Physiology*, vol. xiii., 1879) I made the statement, and endeavoured to show experimentally and otherwise, that the vessels of a granulating surface are not newly formed, but are simply the superficial capillaries of the part which have become displaced. They have been thrown upwards as granulation loops by the propelling action of the heart, because the restraining influence of the skin has been removed.

One of the great functions of the skin is to counteract the tendency which the superficial vessels have to be pushed outwards, and a similar restraining action is conferred upon the deeper branches by the fasciæ which surround them. These hold the vessels in their proper places, and overcome the tendency which there is to peripheral displacement.

Whilst getting the information for that paper, and subsequently when studying the subject of organization and healing still further, I was much struck with the similarity of the process of vascularization as seen on a granulating surface, and that which occurs when a blood-clot or a fibrinous exudation is replaced by a vascular cicatricial tissue. Later on in this paper I shall have to refer to the process of organization of blood-clot and of fibrinous lymph more fully, but at present will merely observe, as a preliminary measure, that blood-clot or fibrinous lymph plays merely a mechanical and passive part in any situation where it becomes replaced by a fibrous cicatrix, and further, that their vascularization is not owing to new formation of bloodvessels, but rather to a displacement and pushing inwards of the bloodvessels of surrounding tissues. Being convinced that the blood-clot or fibrinous lymph, before organization takes place, was just as so much dead matter in a tissue, it occurred to me that if we could employ, instead of blood-clot or fibrinous lymph, some dead porous animal tissue, it, also, would, in the course of time, become vascularized and replaced by cicatricial tissue. For long I could not think of any animal texture which would subserve this purpose; but an accidental circumstance in the summer of 1880 which came under my notice suggested to me that sponge would in all probability, if placed under proper conditions, fulfil the object in view.

The reasons on which I grounded this hope were, firstly, that it is a porous tissue, and in this respect would imitate the interstices of the fibrinous network in a blood-clot or in fibrinous lymph. In the second place, it is an animal tissue, and, like other animal tissues, such as catgut, would, if placed under favourable circumstances, become absorbed in the course of time. Thirdly, that it is a pliable texture, and can, consequently, be easily adjusted to any surface, or be cut of convenient size to be placed in a cavity. If, therefore, the blood-clot or fibrinous exudation merely acts mechanically in the process of organization, there is no reason why sponge or any other porous texture should not similarly become vascular and organized.

I resolved, accordingly, to see whether this theory would stand the test of experiment; and probably, before going further in the way of explanation, it will be well to give an account of some of the experiments which I have made, so as to afford an idea of the objects aimed at.

Through the kindness of Dr Watson, Messrs Bell, Chiene, and others, I have had opportunities of carrying on this investigation during the last twelve months, and I have to offer them my sincere thanks for affording me the means of doing so.

Experiment No. 1.—The subject of this was a female patient who had been admitted into the Chalmers Hospital during the summer of the year 1880, suffering from several ulcerated wounds on different parts of the body. The largest of these was situated on the outside of the left leg. It was circular in shape, and five inches in diameter by from half an inch to three-quarters deep. The edges were indurated, slightly raised, and in some places undermined. There was still a cellular tissue slough at the deepest part of the wound, which gave the whole ulcer a somewhat putrefactive odour. The rest of the floor was in a granulating condition.

The other wounds were of a similar character, but of smaller size. They were situated, one on the scalp, and another further down the leg. They looked very much like ulcers of a specific character, although the patient denied any such history. The largest of them—that on which the experiment was made—had evidently resulted from a huge cellular tissue slough. The patient was admitted with the expectation of having the leg amputated if the wound would not heal by ordinary means.

The usual antiseptic dressings were at first applied, but very little progress was made in its contraction. On 3d August 1880

I filled the wound, while in the above described condition, with one large piece and several small pieces of very fine sponge prepared by dissolving out the siliceous and calcareous salts by means of a dilute mineral acid (nitro-hydrochloric), subsequently washing in liquor potassæ, and then finally steeping for some months in 1 to 20 solution of carbolic acid in water. There is not any necessity for steeping it so long in the carbolic solution: it had been accidentally lying in it for this time. The sponge in the central part of the wound rose a little higher than the edges, so that at its greatest thickness it must have measured at least from half to three quarters of an inch, and five inches wide. The sponge was made to fit the wound very accurately, and was inserted beneath the undermined edges. A piece of green protective was placed on the surface, and, above this, lint soaked in a 1 to 20 solution of carbolic acid in glycerine, with a little tincture of lavender in it. The whole was covered by a pad of boracic lint. An ordinary bandage was applied. The patient was kept in bed, with the limb at absolute rest.

On the following day it was redressed. The sponge was partially soaked with purulent discharge, but there was not any marked putrefactive odour. It was dressed as before.

On 5th August there was a distinct putrefactive odour. It was dressed as formerly, but, in addition, the wound was irrigated with a 1 to 40 carbolic solution. This was continued throughout the progress of the experiment, and at one time, when the putrefactive odour became great, a 1 to 20 solution was employed. Oakum was now used as a top dressing over the glycerine and carbolic acid. The sponge at its shallowest part appeared to be slightly red in one or two points, and the undermined edge had extended for a short distance further over it.

On 6th August the sponge was irrigated as before, and, in addition, was gently squeezed so as to remove any waste products which were contained in it. Opposite where the cellular tissue slough was situated there seemed to be a considerable quantity of discharge given off. The whole sponge was now completely soaked with the discharge, and, further, it was noticed that its edges were adhering to the granulating surface. At one part it looked almost as if the edge of the sponge were dissolving. This may have been caused by its having been to a certain depth imbedded in the granulation tissue, and appearing thinner on that account.

On 8th August, or five days after the application of the sponge, the wound seemed to have shrunk a little. There was very little putrefactive odour, but still the protective tissue was discoloured. The thin parts of the sponge felt very firm, and their interstices were evidently filling with organizing tissue. If the surface was pricked it bled freely. Healing seemed to be going on in two ways, namely, from the edges towards the centre, and from below upwards. The edge of the sponge at the thinnest part also seemed to be dissolving as it became infiltrated with the new tissue. Its surface, moreover, was covered by a grayish-coloured pellicle, very much like that seen on the surface of some wounds healing under antiseptics.

During the treatment of the case iodide of potassium was given internally, from which marked constitutional benefit seemed to be derived.

From this time onwards the sponge rapidly became filled with organizing tissue, until on 29th November there was only a small piece of it to be seen on the surface. As soon as it became vascular and filled with new tissue the epithelium spread over it. There did not seem to be any difficulty in getting the epithelium to spread over it whenever the underlying surface was of a proper nature, that is, whenever it became filled with young and vascular connective tissue elements. On this day (29th November) the circumference of the limb at the part which had healed was 21 inches, while at a corresponding part in the other limb it measured only 19 inches. The difference was not caused by œdema, as the limb was perfectly free from this, and had been kept bandaged and in the horizontal position. It was evident that the cause of the increase was the tumour-like mass of new tissue which had now supplanted the sponge.

On 5th January 1881 I showed the patient, through Dr Watson's kind permission, to the Medico-Chirurgical Society, at which period the sponge had entirely vanished, and there was merely a superficial, typically healthy granulating surface, measuring about 1½ inch in diameter. Dr Clark, Resident Surgeon at the Chalmers Hospital, whom I have to thank for latterly superintending the dressing of the case, informs me that a small piece of the sponge, the last vestige of it seen, at last became dissolved at its attachments and separated.

In the healing of this wound it seemed that, instead of the edges and surrounding skin being drawn downwards and towards the centre, as in the usual process of cicatrization, the reparative material had in reality grown up within the interstices of the sponge, and so had filled the vacuity caused by the cellular tissue slough. It appeared to be, in every sense of the term, *a process of healing up* instead of contracting down.

This first experiment showed me that if sponge be placed over a granulating surface its interstices will, in the course of time, become filled with bloodvessels and cicatricial tissue, just as in the case of a blood-clot, and, ultimately, that the whole of the sponge will disappear in the wound, leaving an organizing mass of new tissue in its place. The vacuities in the sponge appear to be specially adapted for allowing of this, and the framework of keratode affords support to the young vessels which are formed within it.

It further showed that even where the wound continues in a putrescent condition organization will still go on. In the case of the blood-clot, putrefaction tends to destroy it; in that of the sponge, its texture being more resistant, it does not seem to make much difference. The cellular tissue slough which lay at the bottom of the wound, as previously mentioned, must have been the chief cause of the continuous putrefaction which resisted all antiseptic remedies.

Experiment No. 2.—The second case in which I had an opportunity of seeing what would happen if a sponge were left on an abraded surface was where a large piece was employed as a compress over a wound resulting from the excision of an epitheliomatous tumour in the neighbourhood of the lower jaw. The sponge was employed as a compress for a few days; and after this, finding that it had become adherent, the superfluous parts of the sponge were clipped off, leaving a button-like portion over the wound. The patient expressing a desire to go home to the Western Highlands, he was dismissed with the fragment of sponge adhering and forming an excellent protection to the wounded surface. As to what further happened to it I have not had any tidings.

Experiment No. 3.—The next experiment was carried out under Mr Bell's direction in the Royal Infirmary, after seeing the subject of the first experiment at the Medico-Chirurgical Society. There happened to be in one of his wards a patient suffering from an intractable ulcerating wound of old standing on the left leg. It had been previously healed and had again broken out, and there was great cicatricial contraction of the surrounding parts. Several methods of treatment had been employed, but apparently with no benefit, the cicatricial contraction of the skin and deep tissues around preventing the wound from closing. There was not much loss of tissue at the ulcerated part, so that the wound, although it presented a scooped-out appearance, did not show the same enormous vacuity as in the first case. It did not seem to be a very promising case for carrying out the experiment, but, nevertheless, seeing that it was proposed to amputate the limb if it would not heal, Mr Bell thought it right to make a trial of sponge-grafting. The object in doing so was to grow sufficient young tissue to allow of the necessary contraction, and at the same time to afford a healthier—that is, a more embryonic—surface for the epithelium to spread over.

The wound measured 2¼ inches by 2 inches, and on 8th January of this year it was covered by a layer of fine sponge rising a little higher than the level of the skin. It was dressed with Listerian antiseptics, but, at the time of application, was in a septic condition, and remained so throughout. The patient's age was 29.

In from a week to a fortnight after application it had taken a firm hold on the exposed surface, and Mr Bell noticed in dressing it that it appeared to be slightly vascular, and bled when pricked.

The daily record of the case it will be unnecessary to follow out; but suffice it to say that it shortly became filled with young vascular cicatricial tissue, which grew up from below, filling the cavities of the sponge, as in the first case. The discharge from the wound was considerable, and remained of a septic nature throughout the course of the organization.

The patient in time was dismissed with the sponge completely organized and the wound healed. There did not, moreover, appear to be any injurious stretching of the parts, the newly formed tissue having allowed for this.

Experiment No. 4.—A short time after the commencement of this experiment, Mr Bell admitted a woman into his wards who suffered from a large recurrent cancer of the mamma. He had previously excised the primary tumour, and this had been the first recurrence. Several of the axillary glands were now enlarged and apparently cancerous.

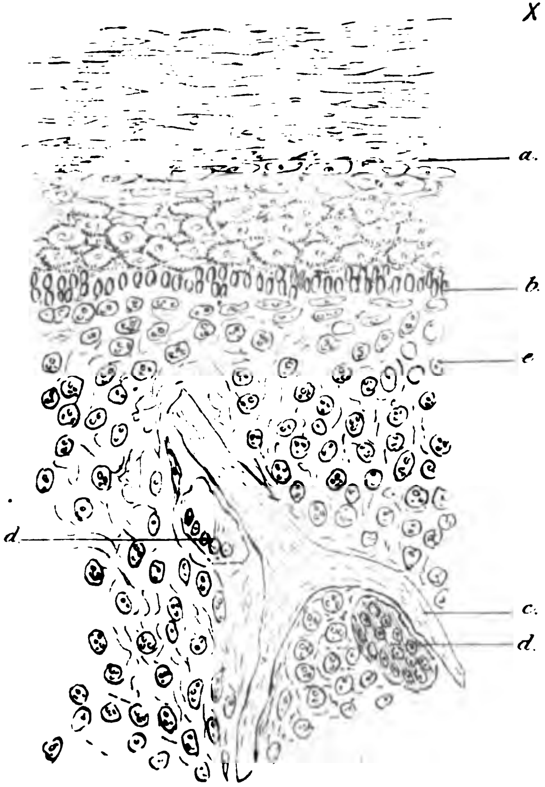
On 3d February Mr Bell excised the tumour, and in doing so required to remove a large portion of the surrounding skin, and to dissect the parts close down to the ribs. A large gap was thus left, which, instead of allowing to cicatrize in the ordinary manner, he filled with a piece of fine sponge. The enlarged glands were removed at the same time. The operation was conducted antiseptically.

On 13th February, ten days after the operation, the sponge was noticed to be vascular. There had been a little serous discharge from it, but the wound and discharge had remained perfectly aseptic, even although such a large mass of a material so liable to foster putrefaction as sponge had been imbedded in the tissues.

I ought to have mentioned that the sponge had been carefully prepared in carbolic acid before being applied, and, of course, the very conditions which would encourage putrefaction would, *cæteris paribus*, be a hindrance to it if no living septic matter were contained in its interstices. There is therefore no difficulty in keeping the sponge aseptic in a wound provided it be so at the time of introduction. The size of the portion placed in the wound in this case was, roughly speaking, twice that of a crown-piece.

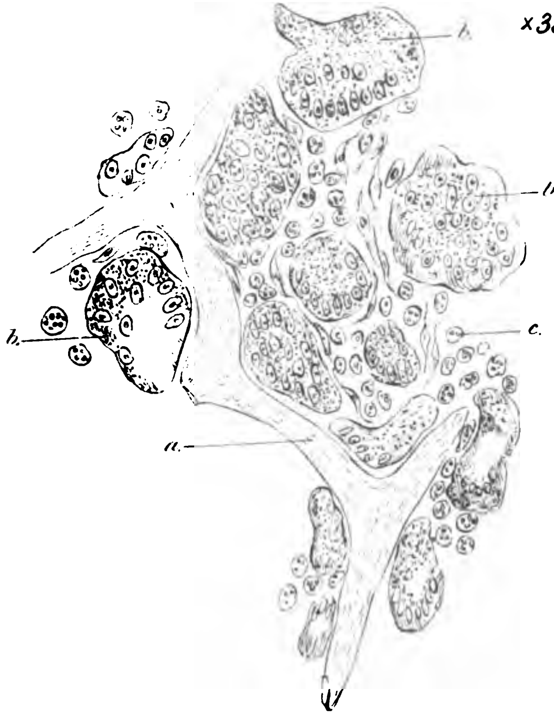
When the sponge became vascular it rapidly filled with embryonic cicatricial tissue, until in the beginning of July it had entirely disappeared, and nothing remained but a granulating surface the size of a shilling, partially covered by a pellicle of epithelium. There was, in the place of the sponge, a somewhat hard mass of tissue.

Seeing that the tumour had recurred, Mr Bell naturally became anxious about the hard feeling which the new-grown mass presented, supposing that possibly the cancer tissue had penetrated into the sponge, and had there found a convenient medium within which to develop and grow.



X 300 DIAMS.

Fig 1



x350 DIAMS.

Fig. 2

In order to ascertain what the exact condition of the part was, he clipped out a small portion covered by a blue pellicle of young epithelium and gave it me for examination. It is noteworthy that, in clipping it out, the patient did not feel any pain, so that, probably, nerves had not found their way into the new mass.

I made some sections of the little piece of tissue, both when fresh and after being placed for forty-eight hours in Müller's fluid, drawings from which are shown in Figs. 1 and 2. In Fig. 1 is seen a piece of the section magnified about 300 diams. At *c* is noticed the keratode framework of the sponge as it appears with this magnifying power, while adjacent to it is shown the embryonic connective tissue (*e*), which has filled the interspaces and surrounds the framework. The surface of this new tissue is covered by a layer of epithelium (*a*), with a complete germinal layer (*b*). The epithelial cells, as so often happens in healing wounds, presented well-marked serrated edges.

The whole of the sponge interspaces were filled with what would be generally called young connective tissue cells, as seen at *e*, Fig. 1; but what was still more remarkable was the extraordinary number of very large giant cells (*d*) which lay in the same situation. A little piece of the sponge somewhat deeper in the wound is represented in Fig. 2, where *a* is again the sponge framework, while all round it, and sometimes adhering closely to it, lie great numbers of giant cells. They are of very large size, as may be seen from the drawing, which represents them as magnified 350 diams. There were in some of them as many as thirty nuclei, and every nucleus had one or more very bright nucleoli, without there being any apparent intranuclear plexus. Around these lay spindles and round cells of a connective tissue type. In fact, the appearance was like that of a typical giant-cell sarcoma. As will be seen from the drawing, there does not appear to be any absorption space in the sponge skeleton (*a*) at the point where the giant cells are attached, and hence I can hardly believe that they were acting as osteoclasts are supposed to do in absorbing and hollowing out a cavity in bone matrix. I should have expected that after this time, three to four months, they should have showed some action of this kind if they really possess such a function, but nothing of the kind was visible. It is possible, and I am open to further conviction on this point, that the portion of sponge examined, being superficial, had not been a sufficiently long time organized to allow of absorption taking place by the erosive action of the giant cells.

Whatever the action of these giant cells may be in the organizing tissue, the observation remains true that in nearly every instance in which I have had an opportunity of examining an excised portion they were present, and usually in great abundance.

The sponge framework appeared somewhat altered from its usual homogenous aspect. It was marked by many little lines (Fig. 2, *a*), and, at its ends, was thinner than usual (Fig. 2), appearances which seemingly indicated that it was dissolving. That such will be the ultimate result I cannot fail to believe. Being an animal texture, it will, like catgut, in course of time undergo tissue digestion.

Experiment No. 5.—Although these cases were all successful as instances of sponge-grafting, it is right that reference should be made to another case which proved unsuccessful, and to notice the cause of failure. The patient was a man who was under Mr Chiene's care in the Royal Infirmary. He suffered from an old necrosis of the lower end of the tibia communicating with a wound of considerable size. At the bottom of the wound the exposed and apparently dead extremity of the bone was visible, while the surrounding parts had an unhealthy, somewhat sloughy appearance. There was not any granulating surface at any part. The cavity was filled with a plug of sponge, but after being kept on for several weeks it did not seem to have formed any attachment. The reason was apparent; the parts could not furnish sufficient embryonic tissue to pierce into the sponge and to organize it. There were not any underlying bloodvessels to penetrate into its interstices. Under such circumstances only one result could be expected, as I told Mr Chiene when he proposed applying it, namely, that there could not be any permanent attachment.

These comprise the experiments which I have made in the human subject; but, in order to carry out the inquiry still further, I have performed certain experiments on animals, with a view to studying the process of sponge organization under more favourable circumstances. My friend Dr Woodhead, who had been working in my laboratory in the commencement of the winter session, undertook to get the experiments carried out for me in Professor Stricker's laboratory in Vienna. I have to offer him my warmest thanks for the trouble he took in getting the experiments performed, and also to tender the same to Professor Stricker for the interest he showed in the experiments, and for placing his laboratory at Dr Woodhead's disposal.

One set of experiments consisted in placing pieces of sponge within the peritoneal cavity and leaving them there for various periods of time, while another set comprised the introduction of the same into muscular parts. A third series of experiments was made by inserting two thin glass plates with a layer of sponge between them into the subcutaneous tissues, while Ziegler's original experiments (*Centralblatt*, 1874, Nos. 57 and 58), of inserting these beneath the tissues without any sponge intervening, were also repeated. Whether the sponge was placed in the peritoneal cavity or in a muscular part, the result, where the case went on favourably, was invariably the same, namely, that the sponge in a few days after insertion began to organize in the same manner as I had found to occur in the human subject.

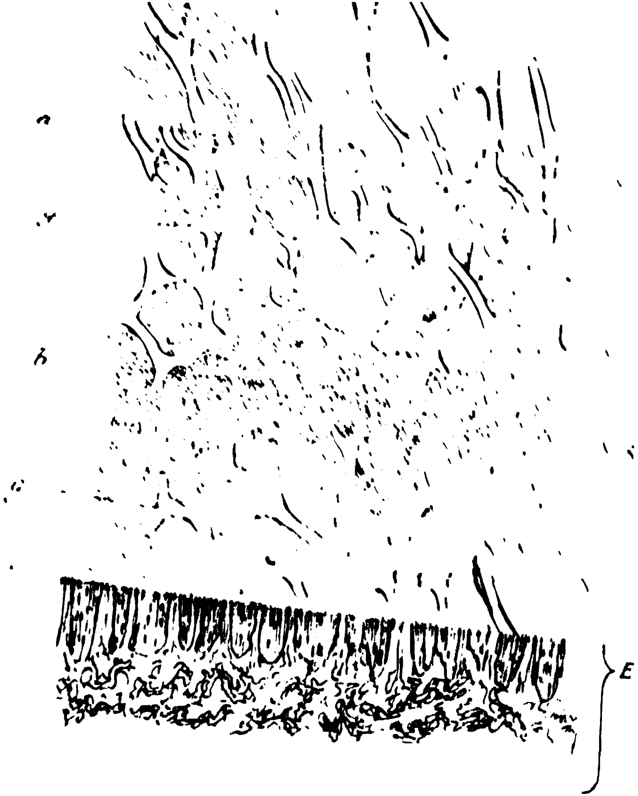


Fig. 3

The following description of the appearances presented is, however, taken from a sponge which had been in the abdominal cavity for a period of *ten days.* There was considerable peritonitis, and this occurrence, either of a local or general nature, is extremely liable to be set up in all such experiments on the peritoneum of the lower animals, chiefly from the difficulty of avoiding septic contamination. The sponge, as generally happens, was found to be adherent to a loop of the intestine. The union was so firm that it could with difficulty be detached. Throughout the abdominal cavity there was a considerable quantity of fibrinous lymph, but the part of the sponge not attached to the intestine was only partially covered by it. The greater part of the unattached surface was still quite porous, and did not present any evidence of organization.

On cutting into it, after it had been hardened in Müller's fluid, there was seen to be a layer of dense newly formed tissue at the attached edge of the sponge, about a quarter of an inch thick. The rest of the sponge was porous, and did not seem to be much altered in appearance.

Sections were now made through different parts of the sponge, and one of these, magnified 50 diameters, is represented in Fig. 3. The part represented is taken from where the newly formed tissue was greatest.

In all the experiments I have made, the first thing noticed is the infiltration of the interstices of the sponge with a certain amount of fibrinous lymph. The canals do not become occluded by it, but fibrin with entangled leucocytes is found adhering to the sponge framework (Fig. 3 A, and Fig. 4 *a* and *b*). The cicatricial tissue, however, gradually invades the apertures of the sponge subsequently to this, and, as will be afterwards more fully shown, displaces the fibrin and destroys it. In a section made from the interior of such a sponge there are always to be seen two distinct areas. The internal is the part which has been in the first instance filled with fibrinous lymph, while the other, the external, is that which is becoming pervaded with cicatricial tissue. These two areas are distinctly seen in Fig. 3. From A to B (inclusive) is seen the sponge framework infiltrated with fibrinous lymph, while the area comprised within C is the cicatricial or organizing layer invading the sponge and displacing the fibrinous lymph. At B there intervenes a very granular layer, which, as will be pointed out, is composed of broken down fibrin and leucocytes.

The line of demarcation between the fibrinous and organizing layers was in all cases perfectly distinct. In no instance was organization found to commence within the interior of the sponge among the primarily effused lymph. Without exception the cicatricial elements grew into the sponge in the form of a distinct layer, springing from the intestine or other tissue to which it had become attached. From this attachment bloodvessels also arose, which, along with the cicatricial elements, were the means of bringing about the organization.

Let us examine a little more closely, in the first place, a piece of the sponge comprised within the area A (Fig. 3), that is to say, the portion which is infiltrated with fibrinous lymph. A small piece of it is seen more highly magnified in Fig. 4. Lying in the sections of the "incurrent" and "excurrent" canals formed by the sponge skeleton there is seen to be a network of fibrin (*b*), while in its meshes are contained many blood-leucocytes (*a*), all more or less in a state of disintegration. The disintegration, however, of these and of the fibrinous network was much more evident at a point nearer to the cicatrizing layer (B, Fig. 3), where the whole network of fibrin, after becoming invaded by the connective tissue elements found in the cicatrizing part, seemed to fall to pieces and to be absorbed. I was not able to discover any cell other than a leucocyte in this lymph-infiltrated portion of the sponge. There was, further, not a vestige of a bloodvessel to be noticed.

Within the cicatricial layer (C, Fig. 3), however, the appearances were very different. As this layer had arisen from the intestine, it will be well to describe in what state the different coats of the intestine were, as the connexion between the cicatrizing layer and the bowel will then be better understood. The mucous and submucous coats of the bowel appeared to be unaltered, and the same can be said of the muscular coat, as may be noticed in Fig. 3, E. All the changes which had ensued in the texture of the bowel appeared to be concentrated in the serous or peritoneal coat.

From studying the appearances in different stages, as seen in various portions of the sponge, the first thing noticed in the serous coat was that its bloodvessels became much distended. At the same time they also became unduly tortuous, so that each vessel could be seen to have a markedly undulating character. The fibrous tissue around these also became œdematous, as shown by the surrounding wide connective tissue spaces.

On examining these distended vessels in other parts, long straight offshoots could be seen arising from them and running directly upwards into the cicatrizing layer (Fig. 3, C and *e*, *e*). The large number of these was in some parts very remarkable, forming, as seen in the drawing, a dense bundle in certain places. For a considerable distance after they left the parent trunk in the peritoneal or subperitoneal tissue they gave off only a very few divisions. Nearer the fibrinous layer, however, they could be seen to give off branches enclosing wide meshes, and at the extreme internal limit of the cicatricial layer they ended in a network of wide loops (Fig. 3, *b*, and Fig. 5, *a* and *b*).

Now, the convex side of these loops was, without exception, always towards the distal extremity of the vessel, the concave towards the proximal (Fig. 5, *b*), and in no instance could I find anything but loops in this situation. I could not see the slightest

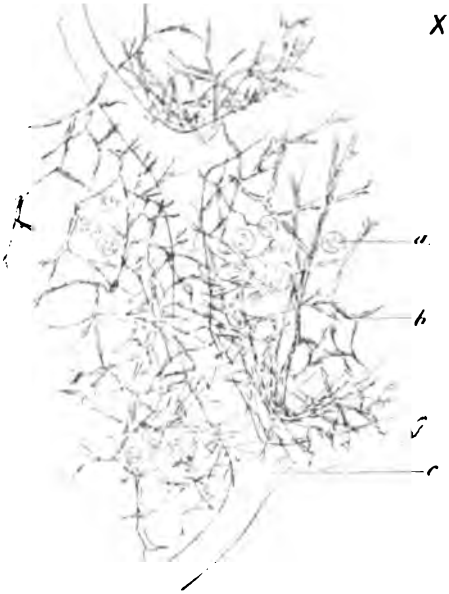


Fig. 4.

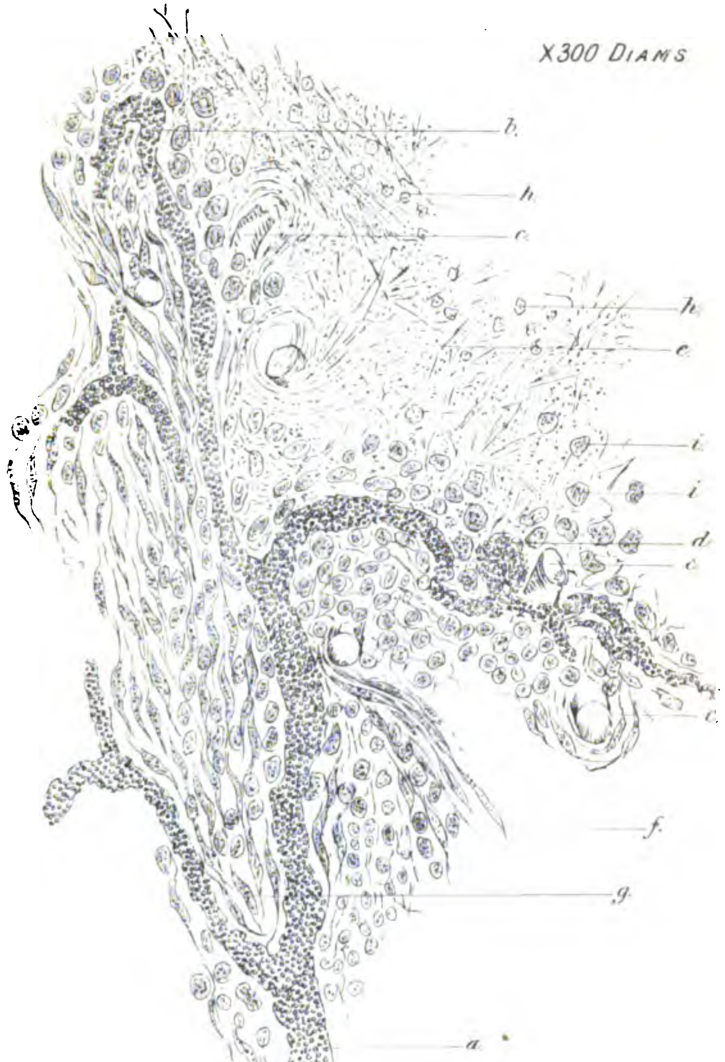


Fig. 5.

evidence of these bloodvessels ending in free extremities. There was always a complete afferent and efferent vessel. When such a loop reached the sponge framework it was pushed into it, often some distance in advance of the cicatricial elements which usually surrounded these vessels. It still, however, maintained the character of a complete capillary loop, and I was unable to detect anything like a free, newly formed, and pointed offshoot.

While the loops were always filled and usually distended with blood, it sometimes happened that the stem leading to or from them was comparatively empty. It seemed as if there had been greatest pressure upon the extremity of the loop, and as if the afferent and efferent vessels had been stretched and so rendered anæmic. On examining other portions of these vessels for any evidence of sprouts from their sides, I must say that I could not detect anything of the kind. It might have been expected that at this time (ten days), if these vessels were newly formed, the offshoots described by Arnold (*Virchow's Archiv*, vol. liii. 70) and others, should have been distinctly visible. After the most searching examination, however, I must confess that nothing of the sort presented itself.

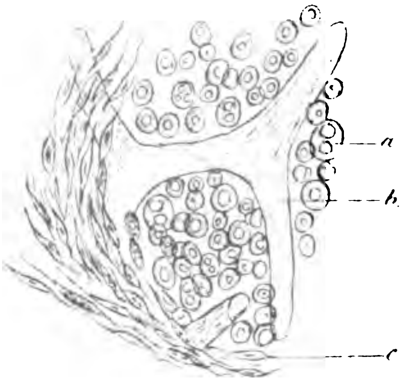
Another curious point, if these vessels were newly formed, was that the stems leading up to the capillary loops at the edge of the cicatricial layer possessed, in many cases, a completely formed adventitious coat. Arnold certainly refers to this circumstance in what he considers to be newly formed vessels in keratitis vasculosa, but whether those which he noticed having this appendage were actually newly formed is a matter of doubt. As regards those seen in the sponge, at least, possessing an adventitia, I shall have to give quite a different interpretation in the summing up of the facts of this paper in the sequel. Suffice it at present to state that the vessels at the invading extremity of the cicatrizing part were always in the form of loops, that these loops could be seen to be pushed into the spaces of the sponge, and, further, that even at the extremity of this part they presented the appearance of fully developed capillaries, without any evidence of offshoots branching from them.

I noted a significant phenomenon supporting the theory that the bloodvessels were pushed into the sponge as loops, namely, that when the convexity of a loop came in contact with the sponge framework, instead of one of its pores, a curvature formed on the vessel at the opposing point (Fig. 5, *c*), and on each side of the obstacle there was pushed in a secondary loop (Fig. 5, *d*) similar to that from which both had arisen. By this process of invagination, as it were, it seemed to me that the sponge became first vascular. A capillary loop was pushed against the sponge. If it happened to run into a pore it was driven further and further inwards, but if it abutted against an arm of the sponge framework the vessel became invaginated, and a secondary loop formed on each side. Whether another method of vascularization—by formation of new vessels—ensues at a later period, I cannot say; but certainly, ten days after being implanted in a tissue, everything seems to favour the idea that the vascularization is caused by already formed vessels becoming much elongated, and being subsequently pushed into and invaginated against the framework of the sponge.

The area in which the bloodvessels were contained I have named the "cicatrizing layer," because it was in reality the layer which contained the organizing elements. The character of the cellular structures found in this cicatrizing layer was (1) chiefly that of round cells (Fig. 6, *a*) several times larger than a leucocyte, (2) spindle cells (Fig. 6, *c*) developed from these, and (3) giant cells of great size (Fig. 2, *b*). The large round cells (Fig. 6, *a*) always contained at least one nucleus, sometimes two or more. They had also a very well defined border. Different stages of development were met with between the round and spindle cell. The cellular elements were in all respects identical with those met with in organizing inflammatory products. The giant cells, as in other cases, lay in very close contact with the sponge framework, and were frequently twisted round it.

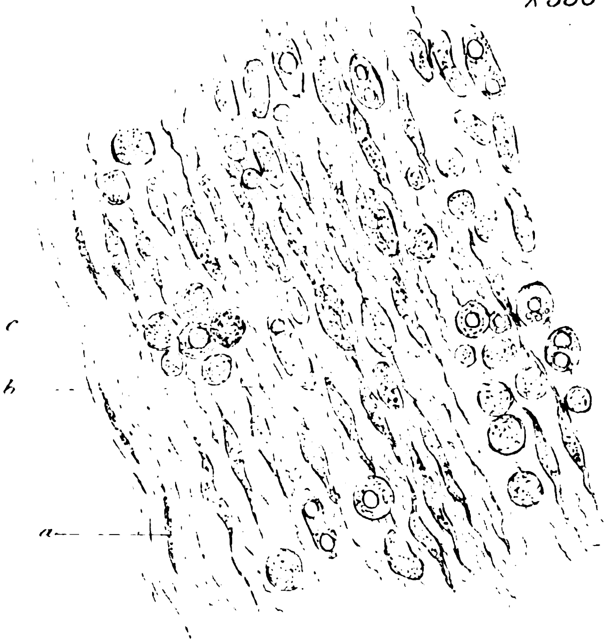
Besides the above-mentioned cells, however, there were, as Arnold has described in parts becoming vascular, masses of coloured blood-corpuscles in certain spots, which, looking at the distended condition of the neighbouring capillary loops, and the localized character of the collection, I cannot regard otherwise than as extravasations. Various interpretations have been put upon the occurrence of these collections of coloured blood-corpuscles by Cohnheim, Arnold, Stricker, and others; but surely it is only reasonable to suppose that where such intense hyperæmia exists, as in a panophthalmitis, for instance, or in the case under consideration, small extravasations are only to be expected. In other parts, however, depôts of what undoubtedly were blood-leucocytes were to be seen, more particularly in the subperitoneal tissue, and there was good evidence to show that they had escaped from the distended vessels.

Are these leucocytes, however, to be looked upon, as Cohnheim (*Allgemeine Pathologie*, Band i. S. 29) does, as the elements out of which the larger round, or, as he calls them, "epithelioid" cells, above described, are developed? In speaking of the organization of inflammatory products in his lectures, he has the following:—"Certain it is that all further development is dependent upon the large epithelioid cells, closely related to which are the large giant cells, although the latter are much less numerous. The more rounded epithelioid cells, on account of their sending out processes, become spindle and stellate in shape. The processes grow and become further metamorphosed, chiefly in that they split and become converted into fine fibres and fibrils. From each end of a spindle cell there is then produced a pencil of fine, wavy, attenuated fibres, but



X 300 DIAMS

Fig. 6.



X 350 DIAMS.

Fig 7.

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the broad side of the cell can also give rise to fibres which develop out of its protoplasm. From the fact that the fibres from different cells lie side by side, complete bundles of fibres result, to which, as a rule, several cells belong. The remainder of the protoplasm becomes converted into a fixed cell, which lies in the spaces between the bundles of fibres." He, therefore, clearly traces the origin of a newly vascularized cicatricial tissue to the transformation of these large epithelioid cells.

As regards the origin of the new cicatricial tissue, the question, therefore, comes to be—Whence do these epithelioid cells arise? This question is fully gone into in the work above mentioned, on several of the preceding pages, but, I cannot but think, with somewhat of a biassed mind. The whole object of the author seems to be, by keeping to one line of argument, or by want of sufficiently wide and accurate observation, to endeavour to prove that they are derived from blood-leucocytes which pass out of the newly formed bloodvessels. The fact of there being a possibility of any mode of origin other than this is never taken into consideration, the only point which the author cannot explain being why, in ordinary progressive inflammation, large numbers of these are extruded from the vessels and infiltrate the part without having any tendency to form fibrous tissue. He regards the formation of new bloodvessels as essential for the genesis and growth of the "epithelioid" cells. Without this they would be destroyed by fatty degeneration (p. 287). He further describes the method by which leucocytes become transformed into these "epithelioid" cells. He believes that what Ziegler has observed—namely, the enlargement of "individual pus cells by the absorption of others" (p. 285)—throws a great deal of light upon the subject, and, further, that these epithelioid cells, apparently by over-nourishment, may become converted into giant cells.

Now, although this theory of the origin of the new tissue has been accepted by many pathologists as correct, yet it seems to me that the evidence showing that a blood-leucocyte can become converted into a bundle of fibrous tissue is not proved by anything which the supporters of this doctrine have brought forward.

In the first place, if it is true that an over-nourished leucocyte will form fibrous tissue, why is it, then, that, when immersed in the richest of nourishing fluids, the blood, there is not only no inclination to form fibrous tissue, but not even a tendency to overgrowth? Nothing approaching the size of the "epithelioid" cells is reached. It might be urged that there is some special condition in the blood itself or bloodvessel which prevents their growing to an inordinately great size. Why, then, is it that, after they leave the bloodvessels in the natural course of the circulation and enter the lymph spaces, where they are bathed in nutritive pabulum, they still do not enlarge, still do not form fibrous tissue?

To any unbiassed observer who will take the necessary care in looking at such an organizing tissue as the sponge from which Fig. 3 was drawn, I cannot conceive that the origin of the large epithelioid cells should remain a matter of doubt. In Fig. 7 I have represented a few of the fibres from the fibrous tissue of the subperitoneal coat at the part where the sponge had become attached. What is the signification of the enlargement of every fixed connective tissue corpuscle upon these bundles of fibrous tissue, their polynucleation, their giving birth to a progeny of new cells, the accumulation of these cells in depôts, their subsequent wandering into the newly forming cicatricial mass? Are we totally to ignore such appearances, and say with Professor Cohnheim that the connective tissue corpuscles remain unaltered in such a part, or at least that they are not the progenitors of the cells out of which the cicatricial tissue is produced?

I presume that the supporters of such a theory will not deny that the cells of young growing connective-tissue tumours have a close resemblance to the so-called "epithelioid" cells already mentioned. Will they say that *these* are formed from leucocytes? Would they deny that such can be traced to an excessive activity of the connective tissue corpuscles of the part in which the tumour has originated? Why, then, where there is the most distinct evidence to support it, are they so averse to admit that the connective tissue elements in the neighbourhood of an organizing inflammatory tissue, such as Cohnheim refers to, are also the origin of the so-called epithelioid cells? Even although a believer, in former times, of the current theory of fibrous tissue formation from leucocytes, I cannot find, in all the search which I have made after facts to support it, a single instance in which it could be said, "Here is a leucocyte undergoing fibrous tissue transformation." On the other hand, I have overwhelming evidence to prove that in vascularized newly formed tissues the new connective tissue corpuscles are derived from old connective tissue, and that the so-called epithelioid cells are the direct offspring of the connective-tissue cells of the part.

Where, then, was the connective tissue layer derived from in this case of a sponge attached to the intestine? From the peritoneal and subperitoneal tissues and from the endothelium covering them. It was from the connective tissue nuclei lying upon the bundles of fibrous tissue in these that the progeny of new "epithelioid" or connective tissue cells mainly arose. The whole of the fibrous tissue of these parts was opened out and to a certain extent destroyed (Fig. 3, D). Its place was taken by a layer of young cicatricial elements a quarter of an inch thick. The proximate cause of this unusual activity of the connective tissue will be explained afterwards.

It has already been stated that at the free edge of the cicatricial layer the fibrinous network which filled the interior of the sponge had broken down, and the contained leucocytes had also fallen to pieces. The part to which I refer is seen in Fig. 3 at B, while the same part, more highly magnified, is represented in Fig. 5. It was very interesting to notice how the loops of the bloodvessels brought with them "epithelioid" cells, and how, after the former were projected into the interstices of the sponge, the "epithelioid" cells and spindle cells (Fig. 5, *i* and *g*) made their way into the meshes of the fibrinous network (Fig. 5, *e*) and rapidly destroyed it. Layer by layer the fibrinous lymph was thus removed, until the whole of the sponge canals came to be filled with the cicatricial tissue.

Such were the usual appearances seen when a sponge was left in the abdominal cavity. In some rabbits experimented upon, however, the sponge had first become infiltrated with pus. This had caseated, and, as a result, I am informed by Dr Woodhead that general tuberculosis was excited. Such sponges were practically solid, and in all respects were similar, as regards powers of organization, to a caseous mesenteric gland. Their interstices were filled by a solid, resistant, caseous mass. When this occurred the sponge never showed any tendency to organize, but became encapsuled by a layer of cicatricial tissue. The extreme periphery of the sponge was organized, this having happened apparently before caseation had occurred, but only for a very short distance. The interior was filled simply by caseous *débris* and shrivelled pus corpuscles.

The reason of this, as will be more thoroughly shown, undoubtedly was that the interstices of the sponge had become filled by a solid and hard material which as effectually resisted the entrance of bloodvessels and cicatricial elements as the solid texture of a caseous lymphatic gland or other caseous mass would. I have never seen any evidence of caseation of the sponge and its contents in the human subject, and must account for its occurrence in the rabbit by the well-known liability which there is for purulent collections to become caseous in these and certain other animals.

Another set of experiments was made by placing pieces of sponge between the muscular parts of animals, with very much the same results as those seen when it was left in the abdomen. In some, extensive organization had taken place, in others caseation had occurred, accompanied by encapsuling of the sponge, but without much organization of its substance. I regret that these pieces of sponge were merely inserted between the fibres of a muscle, and were not made to occupy the place of a portion which had been excised. This would make, I believe, a most important difference in the result.

Several other experiments were also made by placing a thin layer of sponge between two thin glass plates, and inserting this into the subcutaneous tissues. The results from this method of experimentation, however, were not satisfactory. The best results, as regards organization, have been obtained by simply placing a portion of sponge in a natural cavity, or in a part where there has been *loss* of tissue, as in those experiments recorded as made upon the human subject. In these the organization was completely successful, and took place without suppuration where the wound was fresh; but where inserted so as to cause pressure on adjacent parts, and thus to interrupt the circulation, the sponge seemed to act injuriously, and induced profuse suppuration. Experiments on the human subject, when made in a fresh wound, are also more successful than those in animals, because the wound can be kept aseptic, which is a very difficult matter to accomplish in the lower animals.

ORGANIZATION OF BLOOD-CLOT.

Such being the facts derived from these as yet somewhat crude experiments, it seems to me that not only may they have a certain utilitarian value, but also that they open up a new field for investigation in the study of healing and growth. We have all been familiar for many years with the subject of skin-grafting, where a few young epidermic cells, placed upon a proper surface, will live, grow, and cover it. John Hunter's experiment of grafting the cock's spur on to the stump of the cock's comb was the first authentic indication we had that such a thing was possible. Of course the two sets of facts connected with skin-grafting and what I have called "sponge-grafting" are in no respect comparable, because, in the former, living epidermic cells are placed on a vascular surface and are simply nourished by it, so that they continue to live and grow, while, in the latter, the sponge merely acts a passive part in supplying a framework in which organization may take place. No one, I think, will say that a sponge, after it is deprived of its sarcode, is a living tissue; and yet we have seen that it is quite as capable of becoming organized as a blood-clot is.

When, however, we come to examine how a blood-clot organizes, the fact that a sponge may also be utilized for the growing of a new tissue is only what would be expected. Any porous substance will similarly fulfil this purpose, although sponge, owing to certain qualities, seems at present to me to possess peculiar advantages.

When blood is effused and coagulates on an abraded surface it will, as originally pointed out by John Hunter, and more fully demonstrated by Lister, in the course of time, become vascular, and, finally, apparently converted into cicatricial tissue. How is this accomplished? Where do the cicatricial elements come from?

For some time past I have studied with great care what occurs in this so-called organization of blood-clot, and am now fully persuaded that blood, after being effused from a bloodvessel, merely acts as a passive agent in bringing about organization—it serves the same purpose as the sponge framework. Any vitality which its leucocytes may have exhibited immediately after the blood has been effused, is, in a short time, lost. In the mere act of coagulating a great many of the leucocytes are destroyed, as Schmidt has shown, and remnants of these are always found in any fresh clot. In giving up their fibrin ferment they fall to pieces. Hence in a blood-clot there are always relatively fewer colourless blood-corpuscles than in an equivalent quantity of blood before coagulation.

What, then, does take place when such organization of blood-clot in a wound occurs? The first thing that happens when blood is effused on a granulating surface or into a tissue is coagulation. At least, such is the first thing seen when organization is going to occur. Blood which remains fluid when effused into a tissue is either all immediately absorbed, or becomes encapsuled by a layer of fibrous tissue. Suppose, then, that such a mass of blood has coagulated in or upon a recent wound, the next thing seen is that the bloodvessels of the underlying parts begin to dilate and to become tortuous. The connective tissue corpuscles around them also commence to show unusual signs of activity. The interfibrillar spaces become œdematous, and each connective tissue corpuscle rises up from the bundle on which it is placed. It then divides into several new cells, and the young brood so produced finds its way into an interfibrillar space. After the distention of the bloodvessels has existed for some time blood-corpuscles of both kinds are seen to wander out through their coats.

The next change perceived in the now tortuous and distended bloodvessels is that they are displaced and pushed outwards towards the clot which is lying on the surface of the wound. The blood-clot is an excessively porous substance. It is more finely porous than the finest sponge. The fibrin forms a network containing only a few blood-corpuscles, while the serum is squeezed out of, or drains away from, the interstices. It is, therefore, a tissue which, if its assumed vital properties be laid aside, is extremely like a sponge in its structure, each being composed of a delicate framework with large and small meshes.

The bloodvessels which have been pushed outwards from the neighbouring parts bear with them great numbers of the actively proliferating connective tissue corpuscles derived in the above-described manner from the neighbouring connective tissues. Coming in contact with the blood-clot, these vascular loops penetrate into its interstices, and the cells which abundantly surround them very soon fill its interfibrinous spaces. Almost immediately after this has taken place the fibrinous network disappears—it falls to pieces—and blood-corpuscles of both kinds can be seen, at the edge of the clot, to undergo a similar fate. They become granular, apparently in some cases fatty, and then disintegrate.

The vascular loops, surrounded by their tissue-forming cells, continue to penetrate further and further into the clot; and as successive meshes of the fibrinous network are filled by them, so they appear to cause its destruction, until the whole clot becomes in this way removed, its place being taken by new vessels and the above-described cicatricial elements. The latter soon elongate into spindle cells, and these, in from three weeks to a month, become transformed into fibrous tissue.

It was from observing the merely passive part played by the blood-clot when undergoing organization in wounds, in bloodvessels, and in other parts, that I was led to suppose that a porous substance like sponge, if applied under the same circumstances, would serve a similar purpose.

ORGANIZATION OF FIBRINOUS LYMPH.

Fibrinous lymph, or, as it is sometimes called, a "false membrane," is simply a modified blood-clot. It is composed of a network of fibrin with leucocytes more or less abundant, and a certain number (often many) coloured blood-corpuscles. It is a blood-clot with a disproportionate mixture of the elements; for while the fibrin and leucocytes are in great abundance, the coloured blood-corpuscles are relatively few. In certain instances even the leucocytes are so few in number that the false membrane appears to consist almost entirely of a dense mass of fibrin. Such a false membrane, as seen on the pleura or peritoneum, for instance, in pleurisy or pericarditis, is extremely porous; it has quite a sponge-like consistence.

Suppose such a sponge-like mass of fibrinous lymph to be effused into the pericardium, how is it that the permanent organization of a fibrous adhesion is accomplished?

It was formerly supposed, and it is still held by many, that the fibrinous lymph has some inherent property of forming fibrous tissue. Such a fallacy, however, only requires a little careful observation for its exposure. Fibrinous lymph has no more power of forming *per se* a fibrous tissue than blood-clot or a piece of sponge has. If we were to place within the pericardial sac a layer of sponge instead of an effusion of fibrinous lymph, I have little hesitation in saying that a permanent fibrous adhesion would be produced between the epi- and pericardial surfaces just as well as by the agency of fibrinous lymph. For, seeing that this fibrinous lymph is nothing more than a modified blood-clot, it is only reasonable to suppose that its histogenetic powers would not be greater than those of such a sanguineous effusion.

The first thing that occurs in the formation of a pericardial or pleuritic adhesion is that the two fibrin-coated surfaces come together and coalesce. A fibrinous union is the result. But in the course of a few days the vessels on each side of the cavity become distended, just as in the sides of a wound with an organizing blood-clot within it. They also become tortuous, and very soon the capillaries on each side of the cavity are seen standing out at right angles to the surface. They are surrounded by young cicatricial elements, and within a few days are pushed into the fibrinous lymph

and organize it. Organizing layers thus invade the lymph, both from the pericardial and epicardial surfaces, and gradually produce absorption of the fibrin and leucocytes on each side. The two cicatricial layers, after the lymph has all been removed, meet; they grow together like the two sides of a wound, and a permanent fibrous adhesion is the result. The same process may be observed in the formation of a fibrous adhesion between any two parts of a natural cavity. The method of union is the same as that by which a wound heals when fibrinous lymph or blood-clot is interposed between its surfaces.

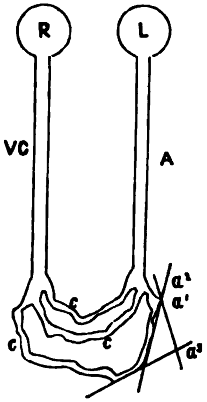
WHAT IS THE CAUSE OF THE ORGANIZATION OF THE SPONGE IN THE EXPERIMENTS JUST RELATED?

From what has been recorded there cannot be any doubt that sponge, if placed under proper conditions, will cause the building up of a mass of cicatricial tissue. The reason for this, or the principle on which the sponge becomes infiltrated with young cicatricial elements, does not, however, at first sight appear to be so clear. For why a porous dead substance should of itself have the power of building up a mass of new tissue containing many bloodvessels seems, at any rate, a strange problem in tissue metamorphosis. The following explanation which I am about to give has become more and more convincing to me by the observation of many collateral circumstances.

Every part of the body is under a certain blood-pressure. The expulsive action of the heart, opposed by the elasticity of the tissues, strikes a balance at a certain mean pressure. Under such circumstances a cavity, in the strict sense of the term, whose walls are not rigid is a physical impossibility. All the so-called cavities, such as the peritoneum, pleura, or pericardium, must necessarily either have their surfaces in accurate apposition or must be filled with some resistant material which will counterbalance the pressure of the blood on their various sides. If a separation were to occur between the surfaces of the pericardium, the pleura, or the peritoneum, then the immediate effect would be the transudation of fluid from the bloodvessels to fill the vacuity until the pressure in the cavity were equal to that of the bloodvessels ramifying in its walls; or, if this were prevented, then the *capillary loops* on either side of the cavity, not meeting with sufficient support from the mutual pressure of the two walls, would tend to be pushed inwards so as to fill the vacuity.

Every capillary in the body has a tendency to be pushed further and further outwards from the heart as a pumping centre, as may be explained by the accompanying diagram.

Let L represent the left side of the heart, and R the right. The blood, leaving the left ventricle by the aorta (A), will be diverted from running in a straight line only in so far as it is opposed by certain forces. In completing the circulation it is so acted upon by these forces that it runs back through the vena cava (V C) in exactly an opposite direction from that in which it passes down the aorta (A). The opposing force which determines this entire change in the direction of the blood-stream is to be found in the walls of the blood-vessels; for if we suppose *c*, *c*, *c* to represent capillaries, it is evident that it is by their intervention that the reversal of the stream occurs.



Now, it is apparent that as the blood would, practically speaking, continue to run in a straight line unless it were for the intervention of the curved bloodvessels, it must follow that the stream will impinge against the coat of the vessel at points a^1, a^2, a^3, and will tend to drive the vessel outwards. That this displacement does not actually occur is, I hold, the result of the resistance of the fasciæ and skin, which so bind the capillaries down in their places that eversion is prevented. In the case of a cavity, such displacement is prevented by the mutual compression of the various sides.

There are many facts which prove that a restraint of this kind is required in order to prevent capillary displacement, and the following may be taken as examples. If, for instance, we remove the skin and leave the part exposed, the almost immediate effect is that the surface begins to granulate; and if we study how these granulation vessels are formed, it is evident that they are nothing more than the superficial capillaries of the subcutaneous tissues which have been displaced and elongated by the pressure of the blood within them. There is not any evidence in such a case to show that the bloodvesssels are newly formed. The loops can be seen in all stages of eversion. That these capillary loops, further, are not, as is generally supposed, a provision of nature towards reparation, is shown by the fact that the larger they grow the less rapidly healing proceeds. They require to become *atrophied* before healing will commence. This is shown to be the case even better by the fact that wounds of non-vascular parts, such as the cornea, heal much more quickly than those of vascular, and also that a wound heals quicker by the first intention than by the second. Granulations, if not otherwise utilized, undoubtedly are one of the great obstructions to a wound healing.

Another example bearing upon the point in question is seen in the healing of wounds by the first and by the second intentions. Make an incision in a tissue, bring the edges together so as to exert mutual pressure, keep the part free from irritation, and the two injured surfaces will rapidly unite without granulating. Expose the surfaces of such a wound by separating them, and do not apply any counter-pressure, and the whole of the superficial capillary loops, which have lost the restraining influence of the tissues, will be everted as granulations.

Thirdly, there is not any tendency to granulation on the pleural or peritoneal surfaces nor on the mucous membrane of the bladder. Separate the adjacent surfaces, however, and expose them, and they will begin to granulate like the surface of a fresh wound.

The vessels of the brain are restrained in their position by the resistance of the cranial vault and membranes. Remove these resisting media, and the brain is seen to pulsate in the first instance, and then is forced out in the form of a hernia.

The granulations in an ulcer of the leg are larger when the limb is dependent, because there is more than ordinary pressure exerted upon them by the weight of the whole blood-column. The tendency to ulceration on the leg is simply an expression of the effects of increased pressure upon the resistant skin. In order to relieve this pressure and to avoid ulceration, we raise the limb and place the patient in the recumbent position. The cause of the ulceration is that the balance which naturally exists throughout the whole body between the expulsive action of the heart and the resistance of the tissues has been disturbed and is in favour of the former. The cellular tissue infiltration which precedes the formation of an ulcer is simply a mass of granulations. The vessels within it are all much distended; they are under an undue pressure, and are ready, when the skin is destroyed, to burst out in the form of capillary loops. We must remove the undue capillary tension by counter-pressure or by raising the limb before the balance can be again struck between the expelling force and the resistance. If, on the other hand, an unduly great amount of contracting cicatricial tissue should result after healing is complete, then the balance between the two may be again disturbed in an opposite direction, and a shrinking of the limb follows.

Lastly, as another example of the displacing action of the heart upon the bloodvessels, we may take that of the different length of the limbs and stature of the body in a blood-vascular animal of the same genus and species. Why is it that in different individuals there is such a difference in stature, such a contrast in the length of the limbs? May it not be that the cause of it in reality is that the propelling action of the heart is specially vigorous in those of great stature, and the resistance of the tissues slight, while in those of small stature the reverse conditions are present. Why is it that growth goes on up to a certain age? May it not be that the heart is relatively more powerful than the delicate stretchable tissues of youth, but that as adolescence is reached the tissues become sufficiently rigid to counteract the heart's action; while in old age, again, the balance is actually on the other side, the heart becoming weak, the tissues more rigid, and a consequent shrinking taking place.

Much the same thing is seen in plants. When growth is most active the plant is in a cellular, pliable condition. Its interstices are easily distended by the ascending sap, which, rushing upwards, will no doubt tend to push out the plant further and further; while, as it becomes older, and as more woody fibre is formed within it, a stable condition is reached, which, if carried to an extreme degree, ends in the atrophy and death of old age.

There therefore seems to be very good reason to believe that there is a constant tendency to displacement of the bloodvessels throughout the body, and that this does not take place oftener than actually happens is due to the resistance of the tissues. The fasciæ bind down those which are internal; the skin has the same effect on those which lie superficially. It is only necessary to remove these restraining influences in order that the phenomenon of eversion and elongation of the bloodvessels should manifest itself.

If it be granted that this theory is correct, it goes far to explain how a porous substance, such as a sponge or blood-clot, may become organized if placed under certain conditions. We have already drawn attention to the fact that the peritoneal, pleural, and other so-called cavities are in reality not to be looked upon as such. Their parietes keep up a mutual pressure, so that no vacuity is left.

If, however, we open one of these cavities and place within it a porous substance such as a sponge, then we entirely alter the conditions. By so doing we leave within the space a body filled with minute pores, in which the pressure must bé very much less than that of the bloodvessels in the walls of the cavity in which it is contained; and, further, if we suppose the pores to be filled with air when introduced, this air will in all probability become absorbed, or at any rate it will be capable of great compression. In the course of time it would undoubtedly become removed and its place perhaps be taken by water vapour. The pores of such a substance will afford insufficient support to the bloodvessels ramifying in the walls of the cavity in which it is contained. These bloodvessels will consequently tend to become displaced and pushed into the pores, for the same reason that granulation loops are pushed outwards on a part from which the skin has been removed. The first thing that ought to be seen in such a part would be dilatation of the bloodvessels in tissues immediately adjacent to the sponge. Then they should become tortuous. The tortuosities should be forced upwards or inwards, as the case may be, and then they should become elongated and their meshes widened. That such actually occurs in the vascularization of the sponge may be seen from the drawings and the description which I have given. That new formation of bloodvessels may subsequently occur I will not deny, although I have never seen it in any of my experiments. That the primary means of vascularization, however, is from the old vessels of the part becoming elongated and pushed inwards, I believe is thoroughly borne out by what can be observed. The principle holds good in any part of the body, that if you remove the resistance, the bloodvessels will protrude; if you apply counter-pressure, they will be restrained.

The same method of vascularization prevails in the application of a sponge to a wound of an external part. Here the resistance in the form of the skin has been removed, and the granulation loops are pushed into the sponge porosities. Were the body applied not porous, then of course the effect would be to restrain the vessels instead of encouraging their evagination.

It might be said, however, if this theory be true, if bloodvessels will become protruded in this way when the resistance of the skin is removed, why do they not grow on indefinitely without the application of a porous body such as a sponge or a blood-clot. In certain cases granulations do become so exuberant as to rise up above the level of the skin; nay, they may form a little wart-like growth in some situations and under certain circumstances. Their growth, however, is generally cut short for various reasons, two of the most important being the spread of epidermis over them, and the constriction of the healing part of the wound. There is another reason, however, which prevents their growing on indefinitely, namely, that they require a framework to act as a support, and to which they may become attached very much as a climbing plant does to a trellis-work.

We all know that if a climbing plant does not meet with the necessary support its growth is impeded and the whole health of the plant is impaired. Tendrils, if they do not meet with a support, dry, become woody, and finally die (Sachs, *Text-Book of Botany*, p. 777). The circulation in such a plant must be seriously interfered with if the plant is allowed to grow along the ground instead of in its naturally upright condition. It seems to be very much the same with granulation capillaries. In some of my preparations tendril-like bundles of spindle cells can be seen to twist round a portion of the framework of the sponge, and, being fixed at the other end to a capillary loop, to support this, and in some cases apparently to contract and pull it outwards. In certain instances I have seen a rope-like bundle of spindles twisted round a piece of the sponge framework and attached at each end to a small capillary vessel, which it was pulling further and further towards the interior of the sponge. If such a support is not given it can be easily seen that the granulation loops, when they become of a certain length, would tend to fall over. Their circulation would thus be impeded, and the loop would probably die or become abortive. The sponge or blood-clot, however, affords a most serviceable trellis-work to which the ends of the loops may become fixed, so as to allow of their circulation going on with as little impediment as possible. The structure of the sponge is thus excellently adapted for the purpose of growing new tissue, because its framework is so delicate and its porosity so great.

I would therefore conclude that the sponge acts in a twofold manner in inducing new growth of tissue, firstly by its porosity allowing the vessels to gain entrance, and, secondly, by its framework affording a support for the capillaries to climb upon.

It might be said, however, if you place a sponge in a peritoneal or pleural cavity, will fluid not be effused into it and so equalize the pressure within the interstices of the sponge and the vessels on the wall of the cavity? If such did happen, then I believe the sponge never would organize. I have already quoted experiments in which it became filled with pus and then caseated, and in which there was not any effort at organization. The same thing would happen if it became filled with serous fluid. One of two things must happen if placed in such a cavity: either fluid must be effused so as to fill the interstices and thus to equalize the pressure, or bloodvessels and cicatricial tissue will have to do so. In all those cases in which organization has taken place the sponge was not filled with fluid, although, of course, a certain amount was always present, and in those which were applied to an external part the opportunity for the exodus of fluid was quite free, a considerable quantity being given off as discharge.

The next point that has to be accounted for is the cause of the great cellular proliferation and invasion of the sponge. It has been related that the sponge, in the first place, shows a few leucocytes in its interior, but that subsequently these, along with the fibrinous lymph which accompanies them, give place to a layer of much larger "epithelioid" cells, which gradually invade the sponge from the periphery. These, as can be seen from Figs. 3 and 5, form a dense layer round the bloodvessels. Why are these formed? What is the cause which excites their development. Professor Cohnheim would answer that they are leucocytes which have exuded from the vessels. I have very little hesitation in replying, that although a few leucocytes are mixed up with them, the greater number do not exude from the bloodvessels, but are derived from the connective tissue.

Almost simultaneously with the hyperæmia of the serous coat of the intestine, in those cases where the sponge was laid in the abdominal cavity and became attached to the bowel, it could be observed that the connective tissue corpuscles showed unusual activity and began to assume a germinal character. In Fig. 7 is represented a small portion of the subserous fibrous tissue of the intestine opposite the attachment of a sponge. Bundles of fibres are seen, with great enlargement of the fixed connective tissue corpuscles upon them. At *a* is noticed a fixed connective tissue corpuscle, lying between and upon the bundles of fibres, becoming enlarged and granular, while at *b* is seen one of the same which has undergone still greater enlargement, and whose flat surface is rendered visible by its superficial position. Others are spindle-like bodies, owing to their being looked at on edge between two bundles. In many of them two nuclei are visible. There was almost always one such nucleus, although it was frequently much obscured from the excessive granularity of the corpuscle. When these bodies became larger they could be seen to elevate themselves from the bundle on which they lay, in the same manner as can be observed in the fibrous tissue out of which a young sarcomatous tumour is growing. They then lost their attachment to the bundle, and moved off in rows or arranged themselves in masses (*c*). They subsequently became polynucleated, and germination, with the most active division of the cell, followed with great rapidity. In the superficial part of the serous coat the whole of the fibrous tissue had become destroyed by this means, the remains of its fibres being dragged towards the sponge by the everted blood-vessels. The cells thus produced were typical "epithelioid" cells, as Cohnheim describes them, and it was by the further enlargement (a simple overgrowth) of these that the giant cells were formed.

The leucocytes and coloured blood-corpuscles, on the other hand, which could be seen exuding from the vessels in certain places, remained as such; and although they in many cases became mixed with these other cells of connective tissue origin, yet they never became any larger, either by over-nutrition or by the coalescence of several together. The cells of connective tissue origin, on the other hand, could be traced through all the stages from their point of origin to the time when they elongated into spindles. The rapidity with which they divided was very much like that seen in a young sarcoma. In fact, at certain parts of this cicatricial layer the appearance was identical with that of a round-cell sarcoma.

How is it, then, that the activity of these fixed connective tissue cells was aroused? What influence was it that brought them into this embryonic state of multiplication? The question, to be gone into properly, would require a special treatise, and I do not intend entering into the complete evidence on the subject at present. It will be sufficient to state that, after examining into the subject with great care, I cannot find any other cause than that the part was overnourished. The distended state of the vessels would allow a greater amount of fluid to escape from them, and that fluid would have a richer composition than ordinary serum—it would, like an inflammatory effusion, be almost pure liquor sanguinis. This, being poured out in great quantity, would undoubtedly, as always happens, induce a special activity in the cellular tissue elements, and would, as may be seen in any such case, induce an overgrowth of their substance with subsequent proliferation. Even in a simply œdematous part the same thing can be noticed to a certain extent; but if the fluid effused should be richer than mere œdematous fluid, should it be pure or nearly pure liquor sanguinis containing an excess of albumen, then I have never failed to see, in such circumstances, appearances similar to the above. It is just a question whether a constructive inflammation does not owe its new tissue simply to an excessive quantity of a highly nutritious fluid exuding from the inflamed bloodvessels and overnourishing the tissue elements.

There is the closest relationship between what we call œdema and what is known as inflammation. The difference is one of degree. In the former a comparatively thin fluid, so to speak, is poured out and induces a certain amount of germination in the tissue elements. In the latter an extremely rich fluid—in fact, the liquor sanguinis—exudes, and, accompanying this, and, I hold, in great part due to it, is produced an appearance such as that shown in Fig. 7. It may be said that similar appearances are seen in non-vascular parts when stimulated; but what parts can we say are non-vascular? If the cornea be taken as an example, it may justly be said to be devoid of bloodvessels; but has it not the most exquisite plexus of lymph-channels capable of conducting into it fluid poured out by the neighbouring bloodvessels? Is not swelling of this connective tissue from distention of its interfibrillar spaces with a rich lymph fluid one of the prominent signs of its inflammation? And if so, does it differ in any material respect from a vascular part under the same circumstances? The study of the cornea as a non-vascular tissue is quite a superficial distinction. It does not possess bloodvessels, but they are in abundance all round it, and its nutritive supply must be influenced by the condition of the bloodvessels at the periphery just as much as a fascia or a tendon with bloodvessels thinly scattered throughout them. Complicated as the subject of proliferation as a result of inflammation may be, it seems to me that the cause of all such proliferative phenomena can be reduced to that of over-nutrition. Under normal circumstances the supply of nutritive fluid is commensurate with the demand. If from any cause this becomes abnormally increased, excessive growth is the result.

I would, therefore, say that the bloodvessels are the primary cause of the vascularization of the sponge, and that they bear into its interior actively dividing connective tissue corpuscles derived from neighbouring connective tissues, and that it is out of the latter that the new cicatricial tissue is evolved. The bloodvessels are the primary, the connective tissue elements the secondary factors in the organizing process.

SOME SUGGESTIONS AS TO THE APPLICATION OF SPONGE-GRAFTING.

Having once recognised the principle that a porous body may become vascularized and be the medium for the construction of new tissue, the application of the method to various purposes naturally suggests itself. In applying any porous body with a view to this organization certain points must always be kept in mind. The porosity of the body must be such that all the canals freely communicate. Sponge is exquisitely suited for the purpose on account of the free anastomosis between its channels, but many other substances might be utilized in the same way. I have of late thought that charcoal or calcined bone might be employed in certain cases. For one purpose at least such a solid framework would be useful. Where it is desired to prevent contraction of the newly formed tissue when it cicatrizes, where it is of moment to retain the newly formed tissue of its original bulk, then a solid framework must be employed. A solid framework will, I feel sure, organize just as a sponge would, and will have the special quality of preventing cicatricial shrivelling. When once incorporated with the tissue it will not cause any more irritation than the calcareous matter of a bone does. A dead body of this kind is not of itself an irritant. It is the injurious application of it, or the septic matter which it may introduce, which gives rise to the mischief.

Such a solid framework, it strikes me, would be particularly useful for forming new bone. One of the great dangers of a simple periosteal detachment operation is that the future bone is not sufficiently bulky and strong. By supplying a solid framework of this kind we would avoid this, and the formation of bone would proceed within it just as well as in the spaces of cartilage or the meshes of a fibrous tissue. Bone is nothing more than a fibrous tissue modified by being impregnated by calcareous and other salts. The particular elements which go to form bone are nothing more than connective tissue corpuscles, and by supplying a framework of the above nature for these to ramify within, bone might be grown to an almost unlimited extent. The sponge framework, I should think, although I have not as yet had any practical experience in the matter, would be rather too yielding, and would be liable, when infiltrated with bone elements, to contract. Whether the formation of bone would commence early enough to prevent this I do not know. It is quite possible that it might.

Wherever it is applied, it must be always remembered that the sponge or other framework must be employed merely for the purpose of *filling a vacuity*, otherwise it will cause great inflammation, and the efforts at organization will not proceed. My experiments so far have shown me that, if thrust between two portions of a muscle, for instance, without a portion of the muscle being excised, organization does not proceed nearly so equally as when a piece of tissue is removed and the sponge merely takes its place. The reason is obvious. If thrust between the muscles of a part it will, especially when it gets softened by the juices of the tissues, tend to swell, and, by pressing on neighbouring bloodvessels, will interrupt the circulation within them and so induce an inflammation. Where it merely fills a vacuity, however, the case is very different, and organization will then follow.

Before being applied it should always be rendered antiseptic, and, of course, this specially holds good of its application to a fresh wound. Every one will admit that nothing is more conducive to putridity in a wound than a septic sponge, while, if applied in an aseptic, or rather antiseptic, condition, and dressed with the view of retaining it so, it can be kept, as shown in one of my recorded experiments, perfectly free of putrefaction through a period of several months.

So far as I see at present, the method of "sponge-grafting" seems excellently suited for growing new tissue where that is insufficient to cover a part or to allow of stretching, but whether it may not have a wider range of application remains for future experience to demonstrate. The only objection which I perceive to its application is the somewhat long time required to organize it. During the first ten days I found that a part of a sponge placed in the abdomen had organized from an eighth to a quarter of an inch, but it always happens that one part organizes quicker than another, and hence, although in a large wound one part may thoroughly organize in, say, a month, other parts of the same sponge require longer. I cannot see, however, what objection there would be to the patient going about, if this were practicable, after the sponge had once become fixed. On the contrary, I should think that this might actually, in certain cases, exert a beneficial influence upon the organizing powers of the tissues.

LIST OF ILLUSTRATIONS.

FIG. 1.—Portion of sponge from Mr Bell's case of excision of the mamma three months after the operation: *a*, new epidermis; *b*, germinal layer of same; *c*, a portion of the sponge framework somewhat attenuated at the end; *d*, giant cells; *e*, round connective-tissue cells filling the sponge interstices and underlying the new epidermis.

FIG. 2.—Portion of same sponge as in Fig. 1, deeper down: *a*, sponge framework; *b*, multinucleated giant cells; *c*, round and spindle connective-tissue cells occupying the intervals between the giant cells.

FIG. 3.—Section through the side of a sponge left in the abdominal cavity for ten days, and which had become adherent to the bowel: A, the interior of the sponge, which is filled with fibrinous lymph, but has not as yet organized; B, portion of the same adjacent to the cicatrizing layer (C), in which the fibrinous network is becoming destroyed by the invading cicatricial elements and bloodvessels; C, the cicatricial layer derived from the peritoneal and subperitoneal tissue of the intestine (D); D, the remains of the peritoneal and subperitoneal tissue of the intestine, showing the bloodvessels sprouting from them; E, muscular coat of the intestine; *a*, fibrinous lymph lying in the meshes of the sponge; *b*, a capillary loop being pushed into a space in the sponge; *c*, giant cells adhering to the sponge framework (*g*); *d*, cicatricial elements passing into the sponge along with the bloodvessels; *e*, the straight vessels running off at right angles to the intestine; *f*, vessels in subperitoneal coat in a distended and tortuous condition.

FIG. 4.—Portion of same sponge as in Fig. 3, taken from the centre, showing the infiltration with fibrinous lymph: *a*, leucocytes; *b*, fibrinous network; *c*, framework of sponge.

FIG. 5.—Portion of same sponge as in Fig. 3, at the extreme edge of the cicatrizing layer; it corresponds to the part comprised within B in Fig. 3, but is more highly magnified (300 diams.): *a*, capillary stem leading up to capillary loop (*b*); *b*, capillary loop being pushed into the sponge framework; *c*, portions of the sponge framework; *d*, a capillary loop rising up on each side of a portion of the sponge framework; *e*, the fibrinous lymph breaking down as the sponge is becoming invaded by the young cicatricial elements; *f*, a bundle of spindle cells twisted round a piece of the sponge framework; *g*, cicatricial elements accompanying the vessels; *h*, a leucocyte in the fibrinous lymph; *i*, cicatricial cells invading the fibrinous lymph.

FIG. 6.—Portion of the sponge framework taken from a part which had cicatrized; it corresponds to the area marked C in Fig. 3, only more highly magnified: *a*, cicatricial cells occupying the spaces of the sponge framework; *b*, the sponge framework; *c*, some spindle cells twisting round the framework.

FIG. 7.—A portion of the subperitoneal fibrous tissue taken from same sponge as that represented in Fig. 3: *a*, fixed connective tissue corpuscles beginning to enlarge: they look like spindles when seen on edge between two bundles of fibrous tissue; *b*, the same, more enlarged, and seen on their flat surface; *c*, a group of large epithelioid cells formed from these.

ARTICLE II.—*Report of Fourteen Cases of Completed Ovariotomy.* By ANGUS MACDONALD, M.D., Lecturer on Midwifery and the Diseases of Women and Children, Medical School, Edinburgh; Physician and Clinical Lecturer on Diseases of Women, Royal Infirmary, etc., etc.

(*Continued from page* 334.)

CASE VII.—Mrs B., æt. 30, married four years, mother of three children, was admitted to Ward XVI., old Royal Infirmary, on 30th of January 1879, complaining of pain and distention of the abdomen. She began to fail in health towards the end of the previous October. She experienced great pain in right side of the abdomen, accompanied with fever, and at the same time noticed that her belly began to swell. She was ultimately seen by Dr John Playfair, who recommended her to the Infirmary.

Condition on Admission.—Patient was pale and thin. Some œdema and swelling of the whole right leg, more especially near the ankle. Abdomen presented appearance of an eight months' pregnancy. The superficial abdominal veins were much distended and very large. Measurement round umbilicus, 35 inches. Percussion yields a dull note, except over a portion of the abdomen extending from ensiform cartilage to a part two-thirds the distance from that to umbilicus. Percussion at the flanks also comparatively dull, but not absolutely so. Fluctuation and fluid impact thrill over the whole of the abdomen. Palpation does not cause much pain, except over a single spot midway between umbilicus and anterior superior spine of right ilium. The uterus was rather drawn upwards, was movable, and sound passed 3½ inches into its cavity, causing some pain. There was no perceptible change of resonant areas on change of position of patient, and no transverse flattening of the abdomen when the patient lay on her back.

1st February.—Abdomen aspirated, and 104 ounces of a pale bluish-coloured gelatinous fluid drawn off. The fluid was, on microscopic examination, reported by Dr Foulis to be undoubtedly of ovarian origin. Subsequently to this tapping the patient had a rather severe attack of peritonitis, which, however, yielded to treatment.

By the 26th of March, though the cyst had to a considerable extent refilled, the patient's general health was much improved, and she returned home.

She was, however, readmitted on the 4th of June 1879, when it was noticed the patient's general condition had improved, but that the abdomen was distended to a degree corresponding with its condition on admission in January. The measurement round the umbilicus amounted to 37 inches; from upper edge of symphysis pubis to umbilicus, 7 inches; to tip of xiphoid cartilage, 15 inches; from umbilicus to left anterior superior spine of the ilium, 8 inches, from right, same. No friction audible on auscultating the abdomen. The uterus now only measures 2½ inches, is movable, and is pushed downwards, the fundus being felt in the fold of Douglas. So far as can be made out, no part of tumour is fixed within the true pelvis. Pulse 72, regular, but feeble.

On 9th July the operation of ovariotomy performed. The usual preliminary operations and Listerian precautions were attended to. On cutting through the linea alba, a dense but fragile, extremely vascular cicatricial tissue was cut down upon. It was very difficult to secure the bleeding points, as the tissue was so dense. On penetrating this tissue the scalpel opened into the tumour, whence a large quantity of fluid contents escaped. None, however, entered the abdomen, as the sac was uniformly and firmly adherent to the anterior abdominal wall. Having emptied the cavity of the cyst, which was nearly unilocular, I turned it inside out and found it was free from attachments posteriorly, but firmly bound to a broad surface along the anterior wall of the abdomen. I proceeded to peel the tumour off from its attachment. To do so, however, I was compelled to enlarge the incision superiorly. Numerous and firm adhesions were found between the tumour and the mesentery, and also between it and the small intestines. The adhesions were carefully broken through or divided, and all bleeding points ligatured. The pedicle, which was connected with the right ovary, was transfixed and tied with a ligature of No. 3 Chinese silk. The left ovary being also manifestly cystic, its attachment was also ligatured and itself removed. There was very little bleeding. The abdomen was thoroughly sponged out, the pedicles dropped, and the operation finished in the ordinary manner, a glass drainage-tube being introduced at the lower angle of the wound.

The patient rallied fairly well after the operation. The wound was dressed next morning, when it looked perfectly healthy, and there had been no oozing. Pulse, 120; temperature, 101°·4.

The patient did well the whole of that day, but next morning about 6 A.M. she passed suddenly into a state of collapse, from which she was with difficulty roused by administration of brandy. At visit her pulse was 140. When dressed the wound looked well—no abdominal distention, and only slight tenderness on pressure over the recti. No fluid could be sucked through the glass tube, which was removed as its pressure was irritating the bladder and causing incontinence of urine. Morphia suppositories were continued every sixth hour. The patient felt relieved during the night, and had some sleep and passed wind, but the pulse-rate continued at 140 and the breathing became rapid. She vomited once or twice during night. Next morning an attempt was made to strengthen the heart by injecting digitaline under the skin. This was repeated once or twice, but was of no avail, as the patient died at 11 A.M. the beginning of the fourth day after the operation. We were allowed to enlarge the wound and look into the abdomen. Only very slight peritonitis was found—no bleeding. The pedicles were removed and given to Dr Hamilton, who reports of them as follows:—"The loose end of the ligature attached to the pedicle contained a small quantity of fibrinous lymph, and was extremely friable—easily broken down with needles. The portion immediately round the pedicle was not so infiltrated, and did not appear to be much altered. The portion of pedicle beyond the point of ligature did not seem to be markedly altered further than being infiltrated with fibrinous lymph. The tissues here may have been a little more granular than in the attached portion of the pedicle, but not to any great extent. They did not appear to have undergone fatty degeneration."

CASE VIII.—After this mournful experience, no other patient suffering from ovarian tumour of sufficient size to warrant operation came under my charge till the 7th October 1880, when Mary W., æt. 34, single, from Newcastle-on-Tyne, was admitted into Ward XXVIII., Royal Infirmary, Edinburgh, complaining of a tumour in the lower part of the belly, which caused her much discomfort by its weight and dragging. She had noticed it first about fifteen months ago, but latterly it had grown much more quickly than at first. She also suffered from persistent red discharge from the vagina. Her family history was not good, as several of her female friends appeared to have died of malignant disease. Her mother died of ovarian dropsy at sixty-one, having been tapped once about two months before her death. On admission general health tolerably good, system healthy. The patient was very nervous and excitable. The abdomen was pretty uniformly enlarged, slightly more prominent on the right than on the left. Dulness on percussion extended from pubes to two inches above the umbilicus. Resonance in both flanks. The areas of dulness were not altered by change in position of the patient. The tumour was smooth and even in outline. It seemed rather hard and solid on the right, but soft and fluctuating towards its left border. A fluid impact thrill was obscurely transmitted through it on tapping. Distance from ant. superior spine of ilium to umbilicus, on right side 7¼ inches, on left 7¼ inches; from lower end of xiphoid cartilage to umbilicus, 7¾ inches; circumference of abdomen round umbilicus, 33½ inches; 2 inches below umbilicus, 34½ inches.

P. V.—Uterus displaced downwards and towards the right; sound passes 2½ inches.

On 8th October the largest trocar of the aspirator was passed into the tumour in the mesial line half way between the umbilicus and the ensiform cartilage, but nothing was obtained except a few drachms of a reddish fluid. This, on settling, was seen to consist of blood-cells with a few large nucleated corpuscles lying in a fibrinous matrix.

The patient was sent home on 18th October, with orders to return in two months. No evil resulted from the tapping.

She again presented herself on the 17th December 1880, when the tumour was found to have considerably increased, and to have become softer towards the left, but hard and nodular towards the right. Very distinct fluctuation and fluid impact thrill on the left side. Measurement round the umbilicus, 34½ inches; 2 inches lower down, 33 inches. Uterus as on previous examination.

27th December.—The tumour was tapped with an aspirator trocar; but instead of mesial line, a point considerably to the left was chosen. 38 ounces of a dark-coloured fluid, with a thick coating of grayish-yellow matter, were withdrawn. The matter was nearly completely soluble in ether, and was found to consist of fatty and fibrinous detritus. Some ovarian granule cells were found in the fluid, along with a number of large, rounded, granular masses. Its specific gravity was 1016. The patient was kept in hospital till Saturday, 29th January, when she was subjected to the operation of ovariotomy. The usual preliminary arrangements were attended to. The operation was commenced at 10.46 A.M., and terminated at 12.15. The rectus was divided in making the abdominal incision. There were found to be no adhesions, but in consequence of the thickness of the contents of the tumour it would not run through a trocar, and the original opening had to be somewhat enlarged to admit of its being removed. The cysts had to be broken up by the hand and their contents turned out, sponges being placed round the opening in the cyst wall to prevent escape of its contents into the abdominal cavity. The pedicle was long and narrow, and was connected with right broad ligament. The left ovary was healthy.

The tumour was secured in the cautery clamp, and the bleeding arrested by cauterization. On removal of the clamp there was no trace of moisture in the stump, and after the abdominal cavity was well sponged out the pedicle was dropped and the operation terminated as usual. Five deep sutures were needed for the abdominal wound. No drainage-tube was used. The tumour weighed 12 lbs. The patient made an uninterruptedly good recovery. The highest temperature was 100°·2, which was reached on 5th February, after wound was dressed and deep stitches removed. The wound was dressed for the first time on the fourth day. The only drawback to the cure was from suppuration in the track of the deep stitches. They were obtained hurriedly, and would appear not to have been properly carbolized. The patient returned home on 4th March.

CASE IX.—Mrs T., æt. 43, widow, factory-worker, from Dundee, recommended by Dr Watt, was admitted on 8th February 1881, complaining of swelling of the abdomen. The patient noticed this swelling about twelve months ago. It commenced above the right groin, and gradually extended upwards and across the abdomen. She was twice in the Dundee Infirmary, first time in May, and second in November 1880. On both occasions she was tapped by aspirator by Dr Campbell. The first time 100 oz. was withdrawn, but on the second occasion very little.

On admission the patient's general condition was tolerably good, except that she presented cardiac symptoms indicative of rather serious stenosis of the mitral. The abdomen was distended tolerably uniformly to the size of a full time pregnancy. The tumour felt semi-solid when palpated, the portion of it towards the right being chiefly fluid, that on the left solid. Percussion note on the tumour dull, in flanks resonant. Change of position did not affect the area of resonance. Measurement round umbilicus, 34½ inches; from anterior superior spine to umbilicus, on left 9¼ inches, on right 8¼ inches. On inspiration and expiration the tumour was seen to move to a certain extent below the abdominal wall. No friction on auscultation. Fluid impact thrill perceptible in some directions, in others not.

P. V.—A portion of abdominal tumour projects behind the uterus, which is thereby somewhat depressed and anteverted. The tumour can be felt filling up the pelvic inlet. The sound passes 2½ inches.

On 19th February 1881 the operation of ovariotomy was performed with ordinary precautions. The abdominal parietes were thin. On opening the abdomen a considerable amount of ascitic fluid escaped. On passing the hand into the abdomen extensive adhesions to the omentum and the sigmoid flexure of the colon were found and partly broken up.

The tumour was now tapped at several places; but as it was largely composed of small cysts with thick, tough contents, its bulk was thereby only slightly diminished. The interior of the mass was now broken up with the hands, and the contents of the tumour squeezed out, the abdomen being meantime filled with carbolized sponges to prevent the contents of the tumour escaping into the peritonæum.

On the tumour being removed from the abdomen it was found that, besides being extensively adherent to the omentum, it was firmly fixed to the sigmoid flexure. The latter was carefully separated from the tumour, and three or four bleeding points in it secured by catgut ligature. The omental adhesions required fifteen or twenty catgut ligatures. The tumour was attached by a longish pedicle to the right broad ligament. The left ovary was healthy. The pedicle was cauterized, and hæmorrhage thereby entirely restrained. The abdomen was carefully sponged out, the pedicle dropped, and the wound brought together with five deep carbolized silk sutures and superficial sutures of silk-worm gut, and antiseptic dressing applied. There was no drainage-tube.

The patient did uninterruptedly well. She was dressed on the following day. No discharge was found, and the wound was not looked at till the ninth day, when the deep stitches were removed. The union had been complete. The bowels moved naturally on seventh day, wind having been passed for several days previously.

Only twice did the temperature reach 100°. By the fifth day the temperature was normal and remained so. The patient returned home to Dundee on the nineteenth day after the operation. The antiseptic gauze proved irritating to this patient's skin, and caused a nasty bed-sore before its injurious effects were observed.

CASE X.—Mrs H., æt. 41, married, 47 Cumberland Street, recommended to me by Dr James Andrew. She was admitted on the 28th of February to Ward XXVIII., Royal Infirmary, complaining of a swelling of the abdomen. Her illness began eleven months ago with pain in the left iliac fossa, soon after which a swelling was noticed which gradually extended upwards and across the mesial line. The patient was in the Infirmary for a short time in December, when the abdominal tumour was aspirated and 12 ounces of a fluid, sp. g. 1024, withdrawn. This fluid contained a little blood, which came with the last few drops, much albumen, and microscopically gave evidence of ovarian origin. On admission, the following facts were noted:—The patient has had only one child, and has usually enjoyed good health. The abdomen is very prominent, and is quite the size of a pregnancy at term. It is peculiarly tense, and the surface of the tumour communicates a feeling of irregularity to the touch. One inch below the umbilicus is a solid hard part with a well-defined upper margin, which passes obliquely downwards in a line directed towards the anterior superior spine of left ilium for about 4 inches. The breadth of the solid resistant portion is fully 4 inches. The resistance in the rest of the tumour is uniform, but its surface at all points presents irregularities.

These can be felt to move upwards and downwards under the abdominal wall with the breathing. Fluid impact thrill can be felt, limited in degree, but pretty generally diffused through the tumour except over the hard part already described. The percussion dulness in the middle line extends to a point 2 inches above the umbilicus; the flanks give a clear note. Girth at umbilicus, 35 inches; from symphysis to umbilicus, 7 inches; from umbilicus to ensiform cartilage, 6¼ inches; from right ant. sup. spine of ilium to umbilicus, 8¼ inches; left, 8¼ inches. The diagnosis of an ovarian tumour, multilocular in character, was accordingly clear.

The operation of ovariotomy was performed upon this patient on 5th March 1881 with usual arrangements. There were found to be no adhesions except a rather firm one to the bladder. Owing to the solidity of the anterior part of the tumour, which was composed of small young cysts with thick gelatinous contents, scarcely anything would pass through even a powerful aspirator. I accordingly had to break up the cysts with the hand and turn out the contents of the tumour, protecting the abdomen as well as possible by aid of sponges. Towards the posterior portion of the tumour a large cyst with dark fluid contents was ultimately opened into, and on its evacuation the tumour could be drawn through the abdominal incision.

The tumour was attached by a short thin pedicle to the right broad ligament. The left ovary was found normal. The adhesion to the bladder was separated by the pressure of the thumb-nail, and the pedicle was slowly cauterized. The abdomen was thoroughly sponged out. Some oozing from the loose adhesion existing in front of the firm adhesion of the tumour to the bladder gave rise to some anxiety. A ligature was put upon the largest portion of the bladder adhesion. On removal of the clamp a small artery on the right of the pedicle began to bleed; this was secured by a loop of silver wire. The pedicle was now dropped into the abdomen, and the operation finished in the usual manner; no drainage-tube was used; six deep sutures were needed to close the abdominal wound. The tumour and its contents weighed 12 lbs. The patient made an uninterruptedly good recovery. The highest temperatures were 100°·6 on the evening of the second and third days; after that the temperature became normal and remained so. The patient was dressed on fourth day.. There was no irritation nor discharge. The bowels moved of their own accord on the seventh day. The deep stitches were removed on the ninth day, and the superficial on the twelfth. The healing per primam intentionem was perfect. In this case also the gauze irritated the sacrum, and we had to put cotton between it and the skin. The patient went home on the twentieth day after the operation.

CASE XI.—M. C., æt. 40, single, but having one child, admitted into Ward XXVIII., 27th December 1880, complaining of much abdominal pain and some swelling. Sent by Dr J. Playfair. Before admission she had been treated by Dr Playfair with poultices and opiates for the pain, which had every symptom of peritonitis. He however discovered that, in addition to this, there was an abdominal tumour of considerable size.

On admission her general condition was fairly good. She had a slight systolic murmur at the mitral area. The abdomen was tolerably uniform in aspect, and was distended to about the size of a seven months' pregnancy. It bulged rather on left than right. Girth at umbilicus, 32 inches; distance from ant. sup. spine to umbilicus, on right 7¼ inches, on left 7¾ inches; from symph. pub. to umbilicus, 6 inches; hence to xiphoid, 6½ inches. Some tenderness on pressure over the left side of abdomen, also slight fremitus felt with respiratory movements over its right upper side; distinct fluctuation and fluid impact thrill can be observed over the whole tumour. Percussion dull in front; flanks resonant.

P. V.—Uterus movable. The abdominal tumour can be felt projecting into the pelvis from the right and displacing the uterus towards the left. Sound passes 2½ inches. The patient was aspirated on the 7th February, and 38 ounces of a viscid, dark chocolate-coloured fluid were withdrawn. Its microscopic investigation satisfied us it was ovarian, though somehow much blood-colouring matter had got into it. In consequence of a considerable amount of abdominal pain and a temperature ranging from 100° in the morning to 101° at night, operation was for some time delayed.

On the 19th the operation of ovariotomy was performed in the usual way. The abdominal incision needed was only 3½ inches. Some loose adhesions were found on the right and anteriorly, but these were readily separated by the hand. The tumour did not empty well, as it was found to be composed of three cysts, only one of which was penetrated by the trocar and emptied; but its small size admitted of its being slowly drawn through the abdominal opening. It was attached to the right broad ligament by a rather short, small pedicle. The cautery clamp was now applied, the tumour removed, the abdomen sponged out, and the stump of the pedicle slowly cauterized. On removal of the clamp a vessel in the right side of the pedicle began to bleed. This was secured by a loop of silver wire. The uterus was observed to have several polypoid projections on its posterior wall. The left ovary was healthy. The operation was completed in the usual fashion, and lasted in all 1 hour and 25 minutes, the delay being chiefly owing to the treatment of the pedicle. The patient made a good recovery. Highest temperature was 101°·2 on the evening of the operation, except on the second day, when it rose to 103°·6 at midday, with pain in the bowels and perspiration. A dose of castor-oil was administered, followed by a turpentine enema. These acted well, and temperature dropped to 99°·8 in the evening, and continued low. The wound was dressed on the fifth day. The deep stitches were removed on the eighth day. The union had been complete. The superficial stitches were removed on the eleventh day. This patient also suffered from the carbolic gauze on the sacrum. She left the hospital on the twentieth day after the operation.

Case XII.—M. S., æt. 29, unmarried, residing at 20 Bank Street, patient of Dr Jardine, was brought by him to consult me at the Royal Infirmary on the 1st of June 1881. The patient, who possessed fairly good health, complained of a swelling in her abdomen which had continued for about two years, and now began to give her some trouble and uneasiness.

On examination, abdomen laterally uniformly distended to about the size of a six months' pregnancy. The distention was due to a rounded, tense cyst, which was perfectly movable, and gave a dull note in front, a clear one in the flanks, and both fluctuation and fluid impact thrill. The uterus was of normal size and movable. The diagnosis of an ovarian cyst previously made by Dr Jardine was confirmed by me, and it was arranged that, with his assistance and that of other friends, I should operate in the patient's house on the afternoon of Tuesday, 7th June. The usual preliminary preparations being made, the operation was performed at 4 P.M. on the above-named day. The operation was a peculiarly easy one. The cyst was a nearly unilocular one, and its contents flowed easily through the canula. There were no adhesions. The cyst was attached by a long thin pedicle to the right broad ligament. The pedicle was secured in the cautery clamp, the abdominal cavity carefully sponged out, the tumour removed, and the pedicle cauterized. There was no bleeding on removing the clamp. The left ovary was found healthy. The pedicle was then dropped into the abdomen and the operation finished in the usual manner. The operation lasted one hour. The tumour and contents weighed about 6 lbs. The patient made an excellent recovery. The temperature never rose to 100°, but varied between 99°·8 and normal, the pulse ranging from 70 to 110.

On eighth day deep stitches were removed under the spray, when it was found the deep wound had completely united. The superficial stitches were removed on the eleventh, and no further dressing applied. The patient was able to be up before end of a fortnight.

Case XIII.—Mrs L., æt. 27, married, actress, sent to me by Mr Westwater, was admitted to Ward XXVIII., Royal Infirmary, on 6th June, complaining of swelling in the abdomen. The patient appeared in good health and well nourished. Her menstruation had latterly been *too frequent* and profuse in amount.

On admission, with exception of genito-urinary, all other systems normal. Abdomen uniformly distended about the size of a six or seven months' pregnancy. Girth at umbilicus, 32 inches; at the most prominent part, 32¼ inches; from umbilicus to symphysis pubis, 8¼ inches; from umbilicus to anterior superior spine, on right side 7 inches, on left 6¼ inches. Palpation of abdomen gave tolerably equal sense of resistance over the surface of the tumour. The tumour could be felt to move under abdominal walls with respiration. The abdominal walls could also be moved over its surface. Fluid impact thrill well observed. Percussion was clear for 3 inches above the symphysis pubis in the middle line. From that to a part 2½ inches above umbilicus, tumour was dull. On the flanks percussion note was clear.

P. V.—The uterus is anteflected. Sound enters 2½ inches. The left ovary can be felt displaced downwards and much enlarged. The abdominal tumour can also be felt in the brim. After usual preliminary preparations, the operation of ovariotomy was performed on 17th June 1881. The abdominal incision was only about 3½ inches in length, and it was kept near the umbilicus to avoid the coil of bowel that lay across the lower part of the tumour.

The tumour was readily exposed. There were no adhesions. The contents of the main cyst were so gelatinous that they would not pass through the tube of our aspirator. This led to some trouble in emptying the cyst. It was connected by a rather thick pedicle with the right broad ligament. The pedicle was secured in the cautery clamp, the tumour removed, and the stump cauterized. On searching for the left ovary it was found to be converted into a thin-walled cyst the size of a man's fist. The pedicle of this ovary was transfixed by a needle carrying a double thread of No. 3 Chinese silk. The double of the thread was cut, the threads linked, and the pedicle tied in two halves, whilst one of the threads was finally tied round the entire stump at the constricted portion. The left ovary was then cut off at a distance of about ¼ to ½ an inch above the ligature. There was no bleeding from either stump, and both were dropped into the abdomen after the cavity had been thoroughly cleaned.

The patient made an uninterruptedly good recovery. The deep stitches were removed on the eighth day, the superficial on the fourteenth. That was all the antiseptic dressing needed. The bowels were moved by oil on the eighth day. The patient left the hospital on the twenty-second day after the operation. It is interesting to notice that Mrs L., up to the time of operation, suffered from menorrhagia, although both ovaries were converted into large cystic tumours.

CASE XIV.—Mrs B., æt. 59, married, mother of three children, admitted into Ward XXVIII., Royal Infirmary, complaining of a swelling of the abdomen. Sent by Dr Allan of Falkirk. The patient had observed her belly gradually swelling for upwards of four years.

In May 1880 she was sent into the Infirmary under my care. I tapped the abdominal tumour with the aspirator, and withdrew 130 ounces of a clear, straw-coloured fluid. Its density was 1008, reaction neutral. Under the microscope a few highly refracting crystals were seen, but nothing else. With nitric acid it deposited a copious amount of albumen. On filtering out this and adding nitrate of silver to the fluid remaining, a copious white precipitate was obtained. The patient felt much better, and I sent her home on 29th of May, hoping that the cyst might not refill.

On Re-admission.—General health good. The abdomen is enormously distended by a fluctuating, nearly symmetrical tumour. Percussion all over the anterior surface is dull; in right flank loudly resonant, in left less so. Dulness in mesial line extends to within 3 inches of the ensiform cartilage. Girth at umbilicus, 40½ inches; 2 inches below, 41½; from symphysis pubis to umbilicus, 10½ inches; hence to ensiform cartilage, 7¾ inches; from umbilicus to anterior superior spine of ilium, on left 10¾ inches, on right 9¾ inches. Free fluctuation easily felt throughout the tumour.

P. V.—Uterus is displaced downwards and posteriorly, but is healthy. No part of tumour can be felt per vaginam.

The tumour was removed by laparotomy on 1st July 1881 at 4 P.M. The usual preliminary arrangements were made. The tumour was easily reached, and, being monolocular, and its contents not specially thick, nearly the whole of it was drained through a large aspirator, not a drop entering the abdominal cavity. There were no adhesions. The tumour was attached by a very broad but rather short pedicle to the left broad ligament. The right ovary was healthy, but small. No trace of the left ovary could be found. The pedicle was caught in the cautery clamp, the tumour removed, and the stump cauterized. On removing the cautery a large vessel, running nearly parallel to the cauterized surface, began to bleed. As from its position I could not ligature it, I transfixed the left half of the pedicle with a double thread of No. 4 Chinese silk, and, after cutting the double of the thread, linked and then tied the left half of the pedicle in two portions. This effectually arrested the bleeding. The pedicle was then dropped into the abdomen, the silk ligature being cut short. The wound, which was about four inches long, was secured with four deep silk sutures and several superficial catgut sutures. The operation was completed in the usual manner. The wound was dressed antiseptically on the eighth day, and the deep stitches removed. The superficial sutures were removed on the eleventh, and the antiseptic dressing removed. Complete union, except over a small portion of skin, had taken place. The bowels were opened by castor-oil on the ninth day. A small extra-peritoneal abscess formed in this case, and discharged through the lower angle of the wound. It healed up without causing any serious disturbance, and the patient made a most complete recovery.

In the following abstract of these cases the results are seen in a bird's-eye view:—

TABLE OF FOURTEEN CASES OF COMPLETED OVARIOTOMY.

No.	Medical Attendant.	Date of Operation.	Age.	Condition.	Adhesions, etc.	Treatment of Pedicle.	Weight of Tumour.	Length of Incision.	Result.
1	Dr Angus Macdonald	1878, Dec. 6	64	Widow	Anterior abdominal wall, considerable	Cautery. One silver ligature	7 lbs.	3½ inches	Recovery
2	Dr Murray, Galashiels	1879, Jan. 25	44	Single—one child	None	Cautery. Two silver ligatures	12 lbs.	4 inches	Recovery
3	Dr Sinclair, Dundee	1879, Feb. 22	53	Married	None	Cautery. Two silver ligatures	19½ lbs.	4 inches	Recovery
4	Hospital	1879, May 9	35	Married	Extensive to mesentery; ascites	Ligature	43½ lbs.	5 inches	Recovery
5	Hospital	1879, June 3	59	Married	Slight to great omentum	Ligature	19 lbs.	4 inches	Death in 2½ days
6	Hospital	1879, June 27	20	Single	No adhesions. Both ovaries removed	Ligature	9 lbs.	4 inches	Recovery
7	Dr Playfair, Edinburgh	1879, July 9	30	Married	Numerous and firm to abdominal walls, mesentery, and intestine. Both ovaries removed	Ligature	8 lbs.	7 inches	Death on 4th day
8	Hospital	1881, Jan. 21	34	Single	None. Tumour very solid	Cautery	12 lbs.	4½ inches	Recovery
9	Dr Watt, Dundee	1881, Feb. 19	43	Widow	Extensive to omentum and sigmoid flexure	Cautery	18 lbs.	4 inches	Recovery
10	Dr Andrew, Edinburgh	1881, March 5	41	Married	One firm to bladder	Cautery. One silver ligature	12 lbs.	4 inches	Recovery
11	Dr Playfair, Edinburgh	1881, March 19	40	Single—one child	Loose to abdominal wall	Cautery. One silver ligature	5 lbs.	3½ inches	Recovery
12	Dr Jardine, Edinburgh	1881, June 7	29	Single	None	Cautery	4 lbs.	3½ inches	Recovery
13	Dr Thatcher, Edinburgh	1881, June 17	27	Married	None. Both ovaries removed	Cautery. Ligature to left ovary	6 lbs. and ½ lb.	3½ inches	Recovery
14	Dr Bruce Allan, Falkirk	1881 July 1	59	Married	None	Cautery. Ligature to half of it	26 lbs.	4 inches	Recovery

This abstract needs one or two words of explanation. The mortality from the operation is seen to be 2 out of 14, that is, 14·2 per cent. The ultimate results, however, are not so favourable as this would indicate. So far as I know,—and I have taken every means to investigate the matter,—10 out of those 14 women are alive and well at this moment. As I have stated in my report, however, No. 3 died in Dundee, five months after the operation, of malignant disease about the sigmoid flexure. No. 4 also, though she recovered from the operation, died two and a half months afterwards of malignant disease of the peritonæum, as certified by Dr Hamilton's report. Still, I hardly think the operation could be blamed for her death, seeing that the growth that caused the fatal obstruction was clearly malignant.

These two cases are another proof of the unfortunate experience of such cases which has been already pointed out so pithily by Dr Keith, viz., that after a successful operation one is frequently vexed to find that the patients succumb within the first twelve months to some form of malignant disease. In regard to my fifth case, which was fatal, I consider that the patient was moribund before the operation was undertaken. Had I been less anxious about giving the patient a chance, and more anxious to maintain good statistics, I should have declined to operate. In fact, with my present experience, I think I ought not to have operated. She died from exhaustion. As to the seventh, I am at a loss to fix upon the cause of death. Dr Keith, to whom I mentioned the case, was inclined to ascribe it to septicæmia. As, however, the strictest antiseptic rules were observed, I am somewhat at a loss to know how it should have happened. I am more inclined to ascribe it to the effects of the shock from the long and difficult operation.

There remains now that I should make a few brief remarks on the diagnosis and treatment of ovarian tumours.

I do not intend to enter into this matter exhaustively. That has been done by Mr Spencer Wells and others far better than I could attempt. But as this subject has seldom been before this Society, and as the diagnosis of ovarian tumours is one that largely interests obstetricians, I may perhaps not offend you if I draw attention to the more salient points of the subject. I might state that of late years ovarian tumour has become, as it were, a desirable diagnosis, as a knowledge of the great certainty of cure has disposed the practitioner to look for this particular lesion. Consequently there arises, as it were, a tendency to make mistakes in the direction of multiplying such tumours. That not a few such mistakes crop up from time to time every one in the position of being consulted in such matters will allow. In no class of cases, perhaps, are blunders more excusable. But if this be the case, it is the more necessary to make a few remarks such as I now propose. In speaking of ovarian tumours I mean to restrict myself at present to those of considerable size, which cause the abdomen to project, and give rise to concern thereby.

Of small cysts that lie in the pelvis only I do not propose to take special cognizance. In proportion as the practitioner is a master or not of the double gynæcological manipulations he will be able or unable to form a correct judgment regarding these. But suppose the tumour is large—what are the characters it presents? How is it to be detected? I should first observe that little positive information can be gathered by vaginal examination. Except it be that the tumour is very large, and, consequently, by the tension of the abdominal walls, is pressed down into the pelvis, or except it had in its early days formed pelvic adhesions, vaginal examination will give very negative results. The uterus is usually displaced to one or other side or downwards, and it is ordinarily possible to depress an abdominal tumour till its rounded outline can be felt from the vagina; but only very little information can be obtained thereby regarding the tumour. It is not meant that vaginal examination is useless or to be ever neglected. By it we can ascertain if the uterus is of normal size, or is fibroid, or is impregnated. We also ascertain in this manner if the suspected tumour occupies the pelvis, is free or attached there, is solid or semi-solid, or contains fluid, and a great many other points. Then, suppose the tumour is large, it is found to grow from the lower part of the abdomen, so as to increase the distance between the symphysis and the umbilicus more rapidly than that between the umbilicus and the ensiform cartilage. Bearing in mind that ovarian tumours take origin with one or other ovary, they usually begin to grow from one groin, and they usually continue to maintain throughout their history the original condition of asymmetry. Thus it is almost always found that the distance of one anterior superior iliac spine from the umbilicus is greater than the other. It is only seldom that such tumours are unilocular, so that it is not common to find free fluctuation throughout the tumour. It is usually possible to find fluctuation and fluid impact thrill over a limited area, but seldom through the entire mass.

Some ovarian tumours are completely solid. Such are of very unfavourable omen. But the great proportion of them are made up of a series of larger and smaller cysts. The contents of the smaller cysts are tougher than that of the larger, and, consequently, an aggregation of such small cysts makes the tumour feel solid. It is not common for such a tumour to be of a uniform outline. The individual small cysts make the wall of the large or parent cyst project, and in that way give rise to an uneven or nodular feel. It is to be remembered that the contents of an ovarian tumour are encysted, so that the fluid is not able to move freely. This leads to a persistence in the areas of dulness and of resonance in the abdomen, so that these do not alter, as in an ascites, with change in the osition of the patient. The tumour usually displaces the intestines upwards and backwards and to one side, like the pregnant uterus. This gives rise to dulness in the mesial line anteriorly, and resonance below the ensiform cartilage and at the flanks. Occasionally, as also happens in certain pregnancies, a portion of bowel, by adhesion or otherwise, may get in front of the tumour, as occurred in our thirteenth case.

To make out connexion between the tumour and one or other broad ligament is important. It can sometimes be done without much trouble by asking an assistant to push up the tumour whilst one feels by vagina or rectum the resultant strain upon the broad ligament. Schultze puts great value on this method, and recommends, whilst it is practised, that the patient be put under chloroform. The history and mode of growth of such tumours must never be neglected, as otherwise valuable hints as to their nature may be missed.

The examination of the fluid is always of great importance, although lately, from fear of causing sepsis, I have given up tapping before operating. An ovarian cyst gives always a gelatinous fluid of a density ranging from 1012 to 1026 or more. Its colour varies from pale gray to deep chocolate. This depends greatly on the age of the fluid. The younger cysts give the lighter-coloured fluid. Such fluid gives a copious precipitate with nitric acid, is alkaline in reaction, and coagulates on heating. The deposit from such a fluid is frequently very slight; but when allowed to form, various matters may be seen under the microscope. Among these are a peculiar cell, a little larger than a pus corpuscle, in which five or six bright shining points may be seen. Dr Foulis and others regard these as particularly valuable in referring the fluid to ovarian origin. In addition to these, large rounded granular cell masses, fibrin, blood corpuscles, hæmatin, etc., are found. The general characters of the fluid, with the peculiar cells referred to, can hardly lead to mistake, although it is to be remembered that the cells mentioned are merely evidence of rapidly proliferating epithelium, and may occasionally be obtained from fluid secreted in such a cavity as the pleura.

A cystic tumour proved to be connected with one or other broad ligament, and with such physical characters as I have indicated, supported, if necessary, by an examination of the fluid, can hardly be anything else. If the ovarian tumour is solid, then our efforts must be to determine, if possible, that it takes origin from one or other broad ligament, and is not connected with the uterus. The difficulty is to distinguish between it and a fibroid of the uterus.

DIFFERENTIAL DIAGNOSIS.

1*st*. *Pregnancy*.—The possibility of pregnancy, the signs and symptoms of pregnancy, and waiting if in doubt, place the diagnosis beyond possible mistake with a fair measure of care.

2*nd*. *Fibroid*.—A large fibroid with solid walls, leading to general tumor

enlargement of the uterus, is easily diagnosed. The increased length which the sound enters, the fact that the uterus moves with the sound, the peculiar feel of the uterus, and the nearly constant menorrhagia, suffice to keep the diagnosis correct. It is quite common to hear a bruit in a case of uterine fibroid; only in vascular sarcomata is such audible if the tumour is ovarian. But much greater difficulty is experienced in cases of fibro-cystic tumours connected to the uterus with or without pedicle. In that case we must try to ascertain whether the tumour is connected or disconnected with the uterus. Then the cyst of a fibro-cystic tumour may be tapped, when we expect to find only a thin fluid of great density, with some blood-corpuscles, and possibly some non-striped muscular fibres. But in those cases it is often found that only an exploratory incision can determine the diagnosis with accuracy.

3rd. Renal Cysts begin below the false ribs and extend downwards and forwards. They have a line of resonance between them and the liver due to the transverse colon, which is of value as showing they are not of hepatic origin, and when aspirated they contain urea. Usually accompanying such there are urinary symptoms, but not always.

4th. Ascites exhibits the characters of free motion of fluid in an imperfectly filled cavity. Accordingly, when the patient lies on her back the abdomen is flattened anteriorly, the flanks give a dull note, and there is clearness round and above the umbilicus. With change of the patient's position the areas of resonance alter. Thus if the patient is turned on her left side, the right flank gives a clear note, and *vice versa*. In case of tapping an ascites the thick gelatinous fluid characteristic of ovarian tumour is never obtained.

5th. Hydatid Cyst of the Liver.—In this case the tumour grows from the liver, distending first the distance between the ensiform cartilage and the umbilicus, the reverse of an ovarian cyst. Again tapping and discovering acephalocysts in the fluid is convincing evidence of the true nature of the tumour.

6th. Hysterical Abdominal Distention, commonly known as spurious pregnancy, need deceive no one, as the percussion is uniformly resonant, and the tumour disappears under chloroform.

7th. There are many other possibilities, such as tumours of the omentum, encysted peritonitis, etc., that lead to difficulty frequently, and which, indeed, on many occasions can only be settled by an exploratory incision. But, as I stated already, this could not fail to lead me further than the scope of my paper will allow.

But after every case is taken, and with the strictest attention to all that is written on the subject, such is the complicity of the involved phenomena, that errors in diagnosis regarding these tumours cannot fail to crop up occasionally. They will, however, be fewer in proportion as the observer excels in experience and in a careful elucidation of every fact connected with the cases.

The Operation.—I now proceed to give a short account of the method of operating. In this I follow as implicitly as possible the procedure of Dr Thomas Keith, whose brilliant successes have secured him a world-wide fame, and have made us all justly proud to reckon him as a colleague and townsman. The patient is carefully prepared for the operation by several days of rest, with light diet, attention to the bowels, and the administration of an antiseptic. I formerly employed the hyposulphite of soda, but now use the sulphocarbolate of soda in doses of ten to fifteen grains thrice daily. The bowels are thoroughly emptied by a dose of castor-oil the day before the operation, and the patient is not allowed any food the morning of operating. The anæsthetic used in my cases has always been a mixture of three parts of absolute ether and one of chloroform. I have long used this mixture—which I understand is Erichsen's—for all severe operations, and in midwifery cases wherever there was a tendency to bleeding. The ether maintains the tension of the circulation and obviates the tendency inherent in chloroform to depress the heart's action, whilst less vomiting and sickness follow the use of the mixture than chloroform alone. The addition of the fourth part of chloroform makes the ether much less disagreeable to inhale at first, and, besides, makes the anæsthetization more rapid.

The strictest antiseptic precautions have been observed by me throughout these operations. They have been performed under a fine cloud of spray from a large three-pointed spray-producer. The solution of carbolic acid supplying the antiseptic element to the spray is of the strength of 1 in 20. The vapour of the water in the boiler is understood to produce an equal quantity of water, so that the strength of spray as it falls on the patient is 1 in 40. The spray-producer is placed in charge of an assistant at a distance of ten or twelve feet from the patient, whom the spray comes to surround as if in a fine cloud of mist. The greatest drawback which I have experienced with the spray is the obscuration of the light it occasions. Injury to the patient from absorption of carbolic acid I have never seen, and I confess I hardly think that my friend Dr Granville Bantock is correct in attributing increase of temperature and other evils to its use. My plan of action, however, is to have as much carbolic acid as possible round about the patient and in the room, but to let as little as possible into the peritonæal cavity, so as to avoid risk either from its irritating effects or its absorption. Every instrument and sponge is kept scrupulously clean, the instruments being washed in turpentine and carbolized before using, and the sponges kept constantly in a 1–20 solution of carbolic acid when out of use. The instruments employed are kept in a tray floating in carbolic solution, and in every respect regarding ligatures and bandages Listerism has been followed. Myself and my principal assistant always wash our hands and arms, with the aid of a nail-brush, first in turpentine and then in 1 in 20 carbolic acid before operating. But as regards gentlemen wishing to see the operation, I have never seen the slightest reason to ask any questions as to where they had been or what patients they had seen, as I have every confidence in the protective measures adopted to avoid any obnoxious principle being transmitted by them to the patient.

After being anæsthetized, the patient is secured on the operating table by passing one sheet over the upper part of the chest and another over the thighs and tying them under the table. It is better further to fasten the hands with a strip of bandage to the legs of the table. The abdomen is now opened, the hair over the mons veneris shaved off to avoid carrying septic influences to the wound under the dressing, the abdomen sponged with 1 in 20 carbolic acid, and a waterproof sheet with an oval hole in it applied over the abdomen by means of sticking plaster, so as to leave enough room for conducting the operation and at the same time avoid mess. The operator stands on the right side of his patient, his chief assistant on the left, whilst the spray is made to play obliquely on the wound. The left shoulder of the patient needs to be specially protected against the cooling effects of the spray. Besides the chief assistant and the chloroformist, one assistant takes charge of the instruments, another of the spray, another of the sponges, and lastly, if the cautery is used, that needs to be looked after. The bladder is emptied. The incision is made in the mesial line, not going nearer the symphysis than 1 or 1½ inches for fear of injuring the bladder. It is better if one does not meet with any rectal fibres in the incision, but it is very common to do so, except the tumour is large and the abdomen widely distended, and need cause no concern or interrupt the work. The bleeding points in the incision should be tied with catgut ligature or caught individually in a Pean's forceps, and retained in their grasp while the operation proceeds. Care is needed, as we near the peritonæum, to avoid penetrating it and the tumour at once. It is best to raise a small portion of the peritonæum in the grasp of a dissecting forceps, and open the abdominal cavity by the stroke of a probe-pointed scissors acting on the portion pinched up, the scissors being held nearly horizontally. The opening, once made, is to be enlarged upwards and downwards with scissors, the finger of the operator acting as a director.

The abdominal incision should be at first just as much as allow the hand to pass; this will be 3½–4 inches. The hand is now passed into the abdomen and passed round the tumour to ascertain if it has adhesions. If these are not firm the pressure of the hand is sufficient to tear them asunder. Sponges are carefully arranged by the side of the tumour to prevent any of its contents entering the abdominal cavity. The trocar of the large aspirator is now plunged into the largest cyst of the tumour that can be reached, and this emptied. After this the large cysts may be emptied in succession. The tumour is kept from retracting by one or other of the special forceps for that purpose. As the tumour empties, the abdominal cavity should be filled up with carbolized sponges, and pressure should also be made on the sides of the abdomen by the chief assistant.

I ought to have mentioned that it is of the highest importance to count the sponges before and after such an operation, as serious accidents have resulted from neglect of this precaution. It is also of importance not to allow any dividing of the sponges during the operation, such as to make one large sponge into two small sponges, in case the increased number thereby arising may be forgotten at the end of the operation.

If the contents of the tumour will not run, the small cysts must be broken up and turned out, sponges being inserted round the opening to prevent the *débris* entering the abdomen. The tumour, being gradually diminished in size, is drawn through the wound. Adhesions are attended to, and either torn asunder or tied, as is deemed necessary. The moment the tumour is out, the abdominal wound is to be covered with sponges, to prevent the entrance of carbolic spray into the cavity of the peritonæum. The tumour once out, the pedicle has to be attended to. If the cautery is to be used, the pedicle is placed in the grasp of the cautery clamp, and the tumour removed. A small portion of tissue, about half an inch in thickness, is slowly cauterized—the slower the better.

Before cauterizing it is advisable to retain command of the stump by placing a Pean's forceps below the cautery at each side of it, so that when the cautery is ultimately loosened the pedicle may not drop out of sight.

After cauterizing the stump the sponges are removed from the abdominal cavity, and if there is reason to suspect that blood or *débris* from the tumour has entered it, it is to be carefully sponged dry. There is much greater danger in leaving any smudge to be absorbed by the peritonæum than there is of peritonitis by the measures needed to cleanse the cavity. This part of the operation being completed, the clamp is carefully slackened and the surface of the stump examined for oozing or bleeding, the stump being held in position by the Pean's forceps. As there is danger that these forceps may themselves arrest hæmorrhage, the one should be slackened after the other; and if on the most careful inspection no bleeding results, the pedicle may be dropped into the abdomen. If an artery bleeds, a silver loop is tied round it and cut short. The cautery is doubtless a most slow and troublesome method in dealing with the pedicle, and is not always certain as a hæmostatic. The great success of Dr Keith with it, and the fact that those cases I lost were ligatured cases, gave me a prejudice in favour of the cautery; but the experience of the ligature at the Samaritan Hospital certainly inclines me to look with favour on the ligature, and to believe that my fears of evil results from it are groundless. Having been compelled to use it in the last two cases, as it is so much more easily employed, I mean to recur to it. When the ligature is used the pedicle is transfixed and tied in two to four or more portions, care being taken, in passing the ligatures and securing them afterwards, that they are all linked in a chain, so that no gaping portion is found in it. The pedicle being disposed of by one or other method, two flat sponges are now placed inside the abdomen, one on each side of the wound, to absorb any blood that may flow from the stitches as they are passed, and the carbolized silk ligature is then carried through the entire thickness of the abdominal wall. It is best to have a straight needle for this purpose, one at each end of the thread, the needle being passed from the peritonæal aspect, penetrating about half an inch beyond its free border, and carried out through the skin at a point sufficient to give a good hold. From four to five of such sutures are usually enough. The sponges are taken out after the sutures are passed. Care must be taken, when tying the sutures, to include no pieces of omentum or portions of intestine, and the deep sutures should not be tied too tightly, else they are apt to irritate. Superficial sutures of catgut, of silkworm gut, or horse-hair may be used; any non-irritating substance will do.

A portion of protective is placed on the wound, and plenty of gauze laid over the abdomen, whilst finally the chief dressing is laid on and the whole secured with a broad roller of gauze. It is better to put a piece of cotton or linen over the sacrum, as in a certain number of cases the gauze is apt to induce bed-sores. The dressing is better to be secured from slipping by means of an india-rubber bandage, which should pass round the thighs so as to keep the whole in position. If the wound is carefully dressed and no pain complained of, it need not be touched till the eighth day. The deep stitches may then be removed. If catgut has been used, the superficial stitches will already have disappeared, but silkworm gut will be perfectly fresh, and, as it is quite unirritating, may be left for other four or six days to give a little support against strain. By the twelfth to fourteenth day the antiseptic dressing may be entirely removed. It will thus appear that I have reduced the dressings latterly from four or five to twice or thrice, and with advantage. I also think a drainage-tube is, as a rule, both a danger and a nuisance. It necessitates frequent changes of dressing, and, I cannot help feeling, increases the risk of septic infection. If the operation is performed with absolute antiseptic strictness, and the abdomen well cleaned out, it will seldom be necessary to use a drainage-tube.

So soon as the operation is finished the patient is clad in flannel and put to bed with hot bottles around her. A brandy enema is administered, as usually at this time the patient is more or less in a condition of shock. The after treatment is very simple. In all my cases I have strictly followed Dr Keith's practice in that respect, and I have no reason to regret doing so. In some books on this subject all kinds of rules are given as to feeding and attention to the acting of the bowels and the administration of opiates.

These I regard as unnecessary or worse. A small quantity of milk—about ℥iv.–℥vi.—the first twenty-four hours, mixed with hot water, is given from time to time in teaspoonfuls. Nothing else is allowed if all goes well. This amount is slowly increased, but only milk and water are given the first week. It is seldom that there is much pain complained of in the abdomen. A morphia suppository may be used the first night, but I have seldom done so that I did not regret it. On the second or third day wind begins to pass. This is apt to cause abdominal pain, and it is better to tell the patient so. On the eighth or ninth day the bowels frequently open of their own accord. If they do not do so, a dose of castor-oil is administered on the ninth day, after which a somewhat more generous diet, in the shape of porridge or other farinaceous food, is allowed. By the end of the fortnight ordinary diet may be given, and by the fifteenth or sixteenth day the patient may get up. You will therefore see that our after treatment is very simple.

The pulse and temperature are usually below normal after the operation. On the evenings of the second and third day the temperature touches 100°, or perhaps rises a little over it, but in the morning will be found about 99°. After the third it falls to nearly normal and remains so. The pulse follows the temperature, averaging usually from 80 to 110. High temperatures, in the ordinary run of cases, appear to me to be referable rather to carelessness in cleaning out the abdomen, and to be consequently more thoroughly avoided by preventing their cause than by the use of cold affusions or quinine.

In conclusion, I cannot omit this opportunity to express my obligations to many medical friends who have aided me in these operations, and without whose assistance it would have been difficult, if not impossible, for me to complete them. Among these I should specially mention Dr Montgomerie Bell, Dr M'Gibbon, Dr Andrew, Dr Foulis, Dr Caird, Dr J. Playfair, Dr Jardine, Dr Chapman, and other friends who have come forward as occasion presented.

ARTICLE III.—*On the Management of Tedious Labours.* By Dr G. HAMILTON, Falkirk.

ON former occasions I have had more than once to remark on the management of tedious labours in vertex presentations. At present I would say a few words on the management of tedious breech cases. In primiparæ these must always give the practitioner some anxiety for the child's life. Perhaps Dr Ramsbotham has not overstated the matter when he says that in such a labour it is desirable that the friends should be informed "that there is a great chance—especially if it be a first labour—that the child will not be born alive." It may not, therefore, be thought a work of erogation for the general practitioner to be quite prepared to such cases satisfactorily; and having that in view, I extract following jottings from my case-book.

During last winter I was called by a midwife to assist her tedious case of breech presentation. The woman was a primipara, the parts rigid, and the pains not very efficient. T midwife had been waiting on the case the whole day, but at 3 P.M. when I was called, no great progress had been made, the being high up in the pelvis, with the os uteri tolerably dil and the membranes ruptured. I remained with the woman, it took me between four and five hours before I could effect deliv As the case was far from home, I had, in giving assistance, manage wholly with my hand—1st, in dilating the os uteri; 2nd, in assisting the pains, by dragging the child down. This did principally by getting one or two fingers into a groin, dragging the parts downwards or pushing them backwards. can easily be seen that in a protracted labour of this kind child's life is apt to be sacrificed, for, with all the force I co exert, and introducing the hand as freely as it was possible, the progress made was very slow, and the child's life was with diffic saved, inflation of the lungs for some time having had to resorted to.

Another case of breech presentation, also in a strong primipara occurred to me lately near at home, and was under my own care from the first. As before, the labour here also was sluggish, goin on into the second day without much progress being made, an the membranes being ruptured early in the labour. In the sam way as before I relied principally, in giving assistance, on the for I could exert by hooking one or two fingers into a groin, an dragging down or pushing the parts backwards. In addition t this, however, I used my straight forceps, with which I found I could give some assistance, though not a great deal, because they constantly slipped when even a moderate amount of traction wa used. I got assistance from them, nevertheless, and the child, when born, was much less exhausted than in the first case I have given.

I notice in the Edinburgh Maternity Report, in the August number of this Journal, that one of the children still-born was in a breech case,[1] and I very much doubt whether either of the children in the two cases related would have been born alive unless assiduous assistance had been given in the portion of the labour I have mentioned. Fortunately in both, when the face came into the hollow of the sacrum, no great difficulty in delivering presented itself.

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[1] No particulars of the case are given. It is merely said, "Child not delivered alive." Surely this is not satisfactory. These reports are published to give instruction to the profession, and I think that every child "not delivered alive" should be held as a circumstance worthy of remark, and some account given of the labour and of the cause or supposed cause of death.

As it may be a long time, in a practice like mine, before I meet th another tedious breech case in a primipara, I may here jot wn what have struck me as improvements on the means I employed or have seen mentioned.

1st, The use of the forceps, in laying hold of the buttocks, I und of importance, though they were defective in so far as they d not give me a firm hold, and this although the measurements my forceps from blade to blade, viz., 2¾ inches, and 1 inch at ps, are less than most others. To remedy this I have got a pair Ziegler's, which I had laid past, brought ⅛ of an inch closer gether in both directions, which I hope may give a better hold ian those I used.

2nd, No doubt a finger or two hooked into a groin is the handiest nd safest instrument that can be used; but, when the nates are igh in the pelvis, the traction that can be exerted in this way is ot great, requiring, in a strong primipara, long and exhausting pplication. The substitute for this usually recommended is the se of a hook of some kind, as shown by Ramsbotham in his 69th late; but most practitioners, I apprehend, would object to the use f an iron hook, however smooth it could be made, from the fear of njuring the child. To obviate this it has struck me that an india-ubber covering would make such a hook much safer and kindlier han if bare. Accordingly, in looking about for something of this ind suitable for the purpose, I took the handle of the common rotchet used in craniotomy, and slipped on it an indiarubber tube, which gives a soft surface, and does not interfere with its use as a crotchet when such is required.

3rd, As a means of assisting in these cases, the use of a bandage or thick tape is usually recommended; but, when the nates are high in the pelvis, the passing of such round the groins is no easy matter, and it is in this position that assistance is chiefly required. Again it has seemed to me that the indiarubber tube could be resorted to for giving soft kindliness to a band, so as not to injure the child's parts, with the advantage of ease in its introduction. Accordingly I have given a piece of thin crinoline iron the proper curve for passing it round the groins (in the same way as we pass a curved watch-spring from the nose into the fauces), and have passed this into a small indiarubber tube, 18 inches long, with which I think traction could be used without the fear of doing injury.

These means are all so simple that every practitioner might easily have them by him, and I think that their use, by shortening the length of such labours as I have referred to by an hour or two, may occasionally be the means of saving a child's life.

ARTICLE IV.—*Clinical Observations on Puerperal Temperatures.*

By A. D. LEITH NAPIER, M.D., Dunbar.

(*Continued from* p. 315).

Typical Temperatures.—In the following it is to be remembered that the statements refer to the axillary temperatures as estimated by the Fahrenheit instrument only; and in some measure the difference between higher records of temperature taken per vaginam or rectum are to be explained. Wunderlich,[1] for instance, regards 107°·6 as a common temperature in septicæmia. So far as more recent observations may be quoted against the name of the pioneer of the science, this is an exceptional height; and unless we assume this to be an *internal* record, or that the type of puerperal septicæmia is somewhat different, or, still more likely, that another most important element, the treatment by reduction of temperature, is explanatory of the lower temperatures more often met with, it is difficult to reconcile his statement with common experience.

Peritonitis affecting the peritoneum more especially covering the womb, and from hence extending to the epigastrium, shows an early sudden temperature. The usual date of invasion is between the second and third day; I have seen it within twenty-four hours. A rigor very frequently ushers in the rise. The range is from 103°·5 to 104°·5; probably 104° is sufficiently accurate. Bad cases of severe general peritonitis may soon show a higher temperature, but with these other grave symptoms will become evident. Traumatic peritonitis has a lower temperature than that from septic or other infective causes.

Metritis is an affection difficult to consider *per se*, as, however much we may desire to distinguish its varieties, it is not always possible to state positively that the disease is a perimetritis, a parametritis, an endometritis, a pelvic peritonitis, or a metroperitonitis. Yet for broad purposes of diagnosis and prognosis the local symptoms are usually sufficient. The temperature is from 103° to 104°. I have observed one case without any evident peritonitis reach 104°·9 (almost 105°); but I think this unusual, and unless there is a concomitant peritonitis, phlebitis, pyæmia, or septicæmia, 103°·5 will be found about the mean. A special aid is afforded by the pulse, which will be mentioned hereafter. The invasion of traumatic metritis is about the third day, if from autogenetic, or other heterogenetic causes, it may be either very rapid (a few hours) or delayed to a week; if the former, it is either quickly mastered by treatment, or lapses into another form of metria.

Septicæmia, if ante-partum, averages 100°–101°. There is a well-marked persistent rise after delivery is effected. In health it is to be remembered that there is usually a fall below the normal for

[1] *Medical Thermometry*, p. 361.

some hours, then a slight rise till the establishment of milk, and thereafter a fall. The septic rise is a very constant one, so that in a few hours there may be an increase of two or three degrees. There are so many seeming varieties of septicæmia, and the *quæstio vexata* of puerperal fever and puerperal septicæmia affords so wide ground for controversy, that I content myself with stating facts briefly which may apply to both that which may be called specific or true puerperal septicæmia or puerperal fever, and metric septicæmia or puerperal septicæmia. In septicæmia the temperature may be as high as 107° (commonly 107°·6, Wunderlich); it is never lower than 102°·5 at some period of the case if the illness is from septic poisoning. The average temperature, possibly as modified by treatment, is 104°·5. I have had cases of autogenous origin, so far as could be judged, which terminated fatally, and in which, until the very end, except on one or two occasions, the highest reading was 103°. The temperature rises at night from 1° to 3°. Mixed cases of septicæmia, *e.g.*, arising from the virus of scarlatina, rubeola, typhus, etc., have usually high records. Septicæmia in anæmic patients, and in those suffering from albuminuria, is less marked by high temperature. Still, again, rare cases may be met with in which the temperature is modified in a remarkable way, as when metria is complicated with rheumatism. The intense prostration from pain and exhaustion, which doubtless materially influences the production of body heat, must be considered as a prominent factor in such cases. It is the stationary high temperature that is worst, more especially if without discoverable local lesion to account for its existence. When a septic temperature remains above 102°·5 persistently for two or three days despite treatment, it may be regarded as at least two or three degrees higher naturally, and is thus most ominous. When the night rise ceases there is an unquestionable advance to a favourable prognosis. In certain instances the temperature falls rapidly before death, *i.e.*, from collapse, but I think the fall of temperature is less usual than the fall of pulse in like circumstances. Certain hours seem to show an increased heat in septicæmia. The temperature rises from 5 to 8 A.M., thereafter falls; at from about 4 to 6 P.M. there is an increase, after this a decrease; and again from 9 or 10 P.M. until 1 or 2 A.M. a decidedly high record.

Pyæmia gives very various temperature curves. The temperature is not necessarily very high (102°–103°), except after each rigor, when from 1° to 3° more may be marked. In this form there is more often a recurrence to a high record after the norm has been touched than in septicæmia, and in some protracted cases the temperature is not to be much relied on without due regard to the local symptoms.

Pelvic cellulitis, oöphoritis, parametritis, etc., which arise post-partum, have a temperature about 102°; if pus is formed, there is a temporary increase to 103°–104°. The invasion is gradual, beginning at 99°–100°, and in two or three days reaching the heat mentioned. Cases may, from the absence of other symptoms, be so overlooked that, unexpectedly, after a few days of seeming languor, a comparatively high temperature is discovered on examination. For the most part such cases require a week or ten days for their development. If a traumatic lesion exists previously this does not hold good. Arising, as these cases frequently do, from imprudent early rising on the third or fourth day after confinement, we may thus find an explanation of the abnormal heat in as many days after as it takes the subacute inflammation to develop. Exceptional cases are met with in which these inflammations arise three weeks or a month after delivery; these are ushered in by a rigor, temperature of 103° or 104°, which falls within forty-eight hours usually to about 102°, and remains there till the subsidence of the disease. It is well to note this, as such cases form a large proportion of the popularly named "bad recoveries" which, from insufficient care or neglect, are overlooked, and may be an evil for years or a lifetime. Attention to the abnormal temperature would cause greater precaution to be observed than most often pertains; and it is a mere everyday experience for all of us to meet with chronic cases of "sore side" which need not have been.

Weid, or milk fever, shows a high temperature, yet the persistency is not great. A rigor commences the illness; in two hours after, the temperature reaches 103° or 104°. The invasion is late but rapid, and the local development of mastitis follows the fever. I have previously referred to another class of milk fever cases which differ from the foregoing in the mildness of their nature, but are more continuously febricular. In these, as I have mentioned, the mild continued fever indicates the mammary disturbance. But the formation of a mammary abscess, if of late origin, does not often cause much constitutional disturbance. The temperature touches 100° or thereabout, and speedily falls on the evacuation of pus.

It is thoroughly recognised that temperature is affected by mental emotion, fright, retention of clots or secundines, retention of urine, constipation, or errors in diet. Various authors might be quoted illustrating the rise of temperature after terror. Dr Mahomed[1] relates a case. According to others, "puerperal fever" may originate from fright or mental emotion;[2] "milk fever" may be also induced by the same cause.[3]

From mental emotion the temperature rises suddenly. I have had cases at 102°·4, 104°, 104°·9, 105°·2, and know of one which reached 106°. The duration is usually short. If no other cause exists, the normal will be regained within forty-eight hours; sometimes two or three hours is sufficient.

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[1] *Brit. Med. Journal*, 12th May 1877.

[2] Dr West, *Obstet. Soc. Trans.*, 7th July 1875; *Brit. Med. Journ.*, 24th July 1875. Dr Braxton Hicks, *Brit. Med. Journ.*, 12th July 1875, p. 780. Dr Edward Tilt, *ibid.*, 4th September 1875, p. 244.

[3] Sir Charles Locock, *Cyc. Pract. Med.*, vol. iii. p. 12, 1833.

Retention of secundines and blood coagula may show increased temperature without the fever being in any way caused by septicæmia. The irritation induced by the foreign body in the uterus causes the rise. I have related a case [1] with a temperature of 103°·2. After the expulsion of a clot the fall was almost immediate, and the record normal next day. About 101° is the average heat in such cases. Retention of urine and constipation shows 100°·5, or, for a short time, more; 99° if after three or four days from the date of delivery is a usual observation.

The temperature varies in individuals (97°·6–99°·5) at different periods of the day (1°·5), and after food (1°). All these observations apply to parturient women in common with other individuals, but, in addition, it is stated that the subsequent puerperal temperature is influenced by the time of day at which delivery took place. It is lowest in women who have been confined at 11 A.M. I abstain from quoting several authorities in support of these generally received facts, but a recent article by Dr Waters[2] will repay careful perusal. Personally I have noted a range from 97° to 101° during the course of one day; there was a *suspicion* only of metritis, which came to nothing. At night the record was 99°·5, next day 98°.[3] Certain individuals have, during confinement to bed, a temperature of 97°. One lady I have attended twice has shown this after both labours on repeated examination; the pulse was 76, the age of my patient 21.[4] On the other hand, some, without another unnatural sign, have a heat of 99° to 99°·5 for a week or ten days after accouchment.

The relations of the pulse to the temperature cannot be entered into fully here, but a passing word will assist us in elucidating the above. In the puerperal period a slow, absolutely slow pulse with a high temperature is at times met with; if so, the record of the thermometer signifies little. A relatively slow pulse with a high rate of body heat is indicative of metritic inflammation (pulse, 100; temp., 104°). A pulse relative in rate to thermometric record 120°–104° is to be distinguished in some measure by its character, wiry, peritonitic, full and bounding, less likely to be dangerous. A high pulse, 140 to 160, with 102° to 103°, is symptomatic of extreme exhaustion. If the pulse in the course of an illness is 80 or under for 48 hours continuously, the temperature need not be feared, however high it is. I have met with but one exception.

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[1] *Obstet. Journal*, No. xciii. p. 643.

[2] *Brit. Med. Journal*, 22d Nov. 1879, p. 806, *et* 20th Dec., p. 978.

[3] *Obstet. Journal*, *loc. cit.*

[4] Since the above was written I have met with another example of an almost identical nature.

What is the cause of the increased temperature? And what is the explanation regarding rigors? The various causes of increased body heat are, to state them briefly (α) Deficient power of heat dispersion; (β) General heat produced by a defined local cause; (γ) Increased power of heat production; (δ) Chemical changes within the organism; (ϵ) Changes in the vaso-motor nerves or vaso-inhibitory nerves; (ζ) Or, finally, abnormal conditions of brain or spinal regulating nerve centres. Taking a wide view of the question, it seems we might, without serious loss to a clearer apprehension of what is still unquestionably undefined, dispense with the four first mentioned as likely to be inseparably connected with the two latter. Whether a definite centre for heat production exists or no has yet to be proven; but whether the vaso-motor nerves of the sympathetic act as simple contractile or as dilating and contractile agents, and whatever the precise value of vaso-inhibitory nerves from the cerebro-spinal system and local centres of nerve moderation is, it is certain that in an unnatural condition of the nervous system is to be found the main explanation of abnormal temperatures.

I dare say we do not err in ascribing an increased body heat to an effort on nature's part to rid herself of disease. We may describe the heat production as the result of an internal struggle which is waged between vitality and virus (understanding by virus, not simply the narrow interpretation, but any malign influence affecting the human economy). Vitality, if sufficiently powerful, expels virus, and, beating her back step by step, ultimately pushes the intruder through the portals of the system; and virus, to pursue the metaphor, deluges the outworks with her tears. More prosaically, acute diseases end by crises and the usual perspiration. In lysis the struggle, if less severe, is more protracted, the end not very dissimilar.

In certain conditions of the blood and nervous system the body is less able to resist disease. In pregnancy we have a watery state of the blood and perversion of nerve control. These, with the addition of the shock to the system caused by parturition, both by depletion and the expenditure of *vis nervosa*, and the rapid changes which the uterus undergoes during the process of involution, and the necessarily accelerated blood-circulation for the establishment of lactation, severally and conjointly are likely factors in the production of abnormal heat. Women who are of sensitive organization are more likely to assume the febrile condition than those who are of equable temperament. Unmarried women and primiparæ are more likely, *cæteris paribus*, to suffer from metria than matrons and pluriparæ.

Laying aside for the time other considerations, we can have unanimity of opinion that the neurotic influence is great in many diseases and symptoms. The influence of terror or joy on the catamenia, on lactation, on the functions of the alimentary canal, on various local and general diseases, on existence itself, is too well known to require more than mention. Hundreds of examples may be found in current literature.[1]

These considerations—and they are but brief outlines—lead us to the point that the nervous system plays a most important part in the production of body heat. Excessive sensibility is congenital in some; it is produced in the majority of women during pregnancy and parturition. To this neurotic disturbance is also to be ascribed the production of rigors which in many cases evidently precede the increased temperature. From the consideration of rigors we can learn a good deal. A rigor is not simply an indication of the advent of the febrile condition; it demonstrates that perverted function has already taken internal possession; it is the signal of distress which the nervous system throws out on its being perturbed by the invading malady. That rigors are not always present, or, if so, unnoticed, is not singular; but it is as usual an experience to find, as naturally to be expected, that metric affections accompanied with much pain are signalized by a decided rigor. The recurrent rigors characteristic of pyæmic affections are to be regarded as the attempts of the system to throw off the repeated doses of the poison by crises. The rigors which are not uncommonly an accompaniment of cases which are of purely mental causation are accounted for in the same way; they are manifestations of internal nervous irritation. In slowly invaded cases, where the disease is more gradual and insidious in development, the climax, as shown by rigor, is seldom reached. Possibly the nervous sensibilities are too much exhausted to resist the intruding evil after it has assumed such dimensions as to be of vital concern. In such cases the vitality has been previously undermined. In some terribly rapid cases of puerperal death there is no time for the exhibition of rigor; the system succumbs to the poison ere it has had time to summon resistance. In many cases the rigor is so mild that it escapes notice, and in others I believe it is never present, owing to individual peculiarity or to some of the preceding causes.

To briefly recapitulate. We have to rely on temperature in puerperal patients as indicating that there is an abnormal condition which may be of much or of little significance. And, further, it is to be remembered that the temperatures as here stated were in all likelihood modified by treatment, which probably explains the difference between my observations and those of others who have given higher records.

(1.) Temperature varies in the normal puerperal condition. In certain individuals it may be as low as 97° F. or as high as 99°·5 for a week or more without a single bad symptom. The average for the three or four days immediately succeeding parturition is

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[1] Vide *Nature of Life*, Dr Richardson (Lewis, 1879), pp. 270-294.

98°·5 to 99°; the subsequent heat is modified by the hour of delivery, but to only a small extent. The healthy puerperal range is 2°·5.

(2.) No temperature over 99° (unless accounted for by individual nervous susceptibility) is normal after four days. The healthy patient may have an *occasional* night temperature of 100° or 101° within the first four or five days, but a continuing, or even a morning or day record like this requires an explanation.

(3.) Slight causes, *e.g.*, constipation, retention of urine, etc., give a rise to 99°–100°·5, sometimes more.

(4.) Retention of clots or secundines, 99°–101°, or upwards; 103° at times.

(5.) Weid has a sudden late temperature of 103°·5, with rapid pulse; the heat falls quickly with the development of the local affection. Other cases of mastitis are mildly febrile for several days.

(6.) Metritis (endo- and peri-) gives record of 103°·5, with slow pulse.

(7.) Peritonitis has a single rigor and a sudden early temperature of 104° or upwards; the pulse is wiry. General peritonitis, if severe, 105°·5–106°.

(8.) Pelvic cellulitis, oöphoritis, parametritis, etc., have a heat of 101°–102°·5; the pulse is weak and irritable. Recurrent rigors mark fresh deposits of pus, and are followed by temporary increased heat, 104°·5.

(9.) Pyæmia and uterine phlebitis average 103°, perhaps more. Cases in which the veins are rapidly affected are soon 104°·5 to 106°, and end speedily. Pyæmia is frequently late in development, 7–10 days.

(10.) Septicæmia varies from 102°·5–107°. The heat is never less, at least for some period of the twenty-four hours, than 102°·5, if the case is properly established. The temperature is liable to variations, but after the norm has been reached is less so than pyæmia. There is no security from remission till the night temperature is under 100°. Recovery may take place after 106°, but is rare.

(11.) Mental emotion may show 104° or even 106°, and we may sometimes have in addition symptoms resembling metro-peritonitis. These cases do not persist, and are generally normal in less than forty-eight hours.

(12.) If the temperature does not rise within ten days from delivery, there is little risk of grave disease unless from gross imprudence in exposure to cold, or zymotic infection.

(13.) Although the temperature is moderately low, 100°–101°, so long as the pulse continues 120 or more we are not safe from relapse. No anxiety need be felt so long as the temperature is kept under 102°. However fast the pulse, if the temperature continues low the prognosis is favourable. An evident exception pertains when temperature is low from collapse. If the temperature is persistent at 102°, or frequently recurs to this point, there must be an abnormal organic condition.

(14.) Temperature should be observed night and morning for the first seven days, and daily for three to seven days after, more especially if any instrumentation has been required for delivery, or if zymotic or epidemic disease prevails. When an abnormal temperature is discovered, it should be reduced to the normal as early as possible by one or other agent. It is of the highest moment to bring it down to 100° and *keep it* there or lower.

It is impossible to summarize all cases of abnormal puerperal febrile conditions thermometrically. A few notable exceptions I have met with, but these are so exceptional as to require special and individual attention, and cannot be brought under general rules in all points.

I have avoided discussing the best means of reducing puerperal temperatures, as I consider this may be better treated of in a separate paper.

ARTICLE V.—*Case of Poisoning with Belladonna and Aconite.* By J. R. HAMILTON, M.D., C.M., Hawick.

ON Saturday, 20th August, I was called to see a young woman, M. T., aged 19 years, who was reported to me as having been suddenly seized with a severe illness. I was at her bedside in a few minutes, and found her in the following condition:—

The bed on which she was lying was stained with vomited matter, which smelt strongly. She was on her left side, her knees drawn up to her face, retching and moaning. The pulse was imperceptible, with the exception of a sudden, full, hammer-like, intermittent beat; hands cold and damp; face deeply flushed; lips somewhat livid; mouth open, and the tongue protruding; nostrils widely distended, the alæ nasi drawn up with each breath; the eyes shining, with the pupils widely dilated, leaving the iris as a thin rim. She was perfectly sensible, told me, when urged, what she had taken, and struggled violently against taking stimulants or anything that was likely to prevent her dying. The end so much desired by her quickly came. Within five minutes from my entering the house she was seized with a severe opisthotonic spasm; on its relaxing she was dead.

Her History.—She had been an invalid eighteen months. The cause of this was paralysis of the right side, which followed an attack of pneumonia. An uncle and aunt have been in a way bedridden for near thirty years. They are still alive, paralyzed on the right side. The paralysis in their case also followed pneumonia. Her father is in the asylum, suffering from a suicidal mania combined with a somewhat homicidal mania. She had been in a despondent state for some time, but evidently had been waiting for a good opportunity. The mixture she swallowed contained equal parts of Lin. aconitæ and Lin. belladonnæ, and she would take about half an ounce of each. From the time of swallowing the mixture until she died was twenty-five minutes.

I report this case because of the rarity of such a combined poisoning, and because of the modified symptoms and rapidity of action.

ARTICLE VI.—*Notes on Feeding Cholera Patients.* By T. M. LOWNDS, M.D., Surgeon-Major (Retired) H.M. Bombay Medical Establishment.

REMARKS on treatment of cholera, at least such as I have read, seem almost entirely occupied with medicinal treatment, with very scant attention to the dietetic management either of this disease or of choleraic diarrhœa. The mortality in the cholera hospitals of the camp of Peshawur in 1879 shows a mortality of 70 per cent (*Lancet*, 3rd Sept. 1881). This mortality is perhaps exceptional, and should surely suggest some examination as to the nature of the epidemic and the means employed to combat it.

In the last seven years of my service in India I treated all my patients on the plan of feeding them during the stage of incipient collapse, and also during the collapsed stage. I shall now make a few remarks on this treatment, as it seems to me it is rather the tendency at present to treat cholera too much by purely medicinal remedies.

Of course, dietetic treatment does not preclude or in any way interfere with the exhibition of any medical means which may be deemed proper or of which experience may determine the advisability; but all purely medicinal treatment has hitherto failed, in a vast proportion of cases, to save the patients, and it has always seemed to me that sufficient attention has not been paid to support the patients in cholera collapse. And with this neglect of feeding how is it possible that in the circulatory system can be replaced the vast amount of fluid, holding albumen, extractives, and salts in solution, poured out from the blood?

That what I have stated as to the withholding of nourishment during the collapsed stage is not exaggerated will be apparent when I allude to what Lebert says in *Ziemssen's Cyclopædia*:—"The greatest caution must always be exercised as regards the nutrition of patients. If the temperature continues to rise, a small, later a large, tablespoonful of good beef soup may be given every three or four hours. When the reaction has become established, tea or coffee with equal parts of milk may be given several times a day; but the greatest care must be taken to proceed gradually, and with the greatest supervision, to an increased and more solid diet."

Mr Macnamara, in his treatise on cholera, gives no direction for food during collapse. He waits for reaction, for he says, "In the fifth stage of cholera (reaction) our main object will be to supply the most easily digestible materials to the patient. For the first two or three days after reaction has set in we must give him nothing stronger than milk, arrowroot, or sago; on the third day we may venture, perhaps, on a little soup, but we far more frequently err in giving too muoh than too little in this stage of cholera. Still avoid alcohol, and, unless in very special cases, give the strictest injunctions as to the patient's food."

Dr Aitken says nothing about dietetic support during the collapsed stage of cholera.

I might multiply instances of non-feeding, but, as far as I can recollect, the special directions for feeding in the collapsed stage occur but in two plans of treatment—one in Dr Stevens's celebrated alkaline treatment, where he directed that plenty of thin broth well salted should be given, and in another record of his work by a physician in the north of Ireland, where he said that more lives were saved by careful nursing and feeding than by medicine. I cannot at this moment find the account, but I well remember how he said that in his professional visits he had again and again saved patients by giving them soup from time to time.

The *materies morbi* of cholera need not in these notes occupy attention, for, whether it be a poison *sui generis*, or due to bacteria of any kind, or a special cholera germ, it is equally our duty to put the system in the most favourable condition for resisting the action of the hurtful agent, and carrying the patient through that collapsed stage which follows the active operation of the onset of the disease, and in which the greatest mortality occurs.

In considering the way in which we should try to supply nourishment to the system, it should always be borne in mind—*1st*, That the rice-water discharges from the stomach and intestinal canal have carried off a large amount of water, albumen, and extractives from the blood (Simon and Lebert). *2nd*, That the blood is so much inspissated that it circulates with difficulty, and this cause at least assists in preventing its due and accustomed aeration in the lungs. *3rd*, That the stomach in collapse is commonly, or not infrequently, contracted, and cannot perform its mechanical part in digestion, and that it has no epithelial covering in which to elaborate gastric juice so as to form peptones. *4th*, That the secretions of all glands of the intestinal canal are in a state of entire abeyance, or at least so much so that none of the ordinary glandular products are available for the selection or change of ordinary articles of food. *5th*, That the state of collapse is in great or perhaps greatest measure due to the thickened state of the blood, and that in all probability the muscular cramp is due to the same cause.

It is scarcely necessary to quote to prove these conclusions, for they—at least the first four—are, I think, generally allowed. As to the fifth, a reasonable degree of probability attaches to it, for a first injection of warm water and salts into the veins almost invariably for a time does away with the collapse and cramps.

Dr Morehead and the late Dr Barlow record two very suggestive cases of dropsy from kidney affection attacked with cholera, in which, during the course of the latter disease, the whole of the dropsical effusions disappeared. From Dr Morehead's first volume of *Clinical Researches of Disease in India* I quote the following, abridging as much as I can:—

An African, æt. 58, was admitted to clinical ward on 10th Sept. 1849, suffering from pleuritic and peritoneal effusion to a considerable extent. "On the 20th the occasional diarrhœa from which he had suffered since his admission passed into distinct cholera, and he died on the 26th. The rice-water-like discharges continued more or less abundant till the 23rd. The pulse became feebler, but remained distinct till shortly before death." "On the 25th the abdominal fulness and the thoracic dulness had almost entirely disappeared." Autopsy revealed an absence of pleuritic and abdominal effusion, but Bright's disease and tubercular peritonitis, with a hardened and granular liver.

Dr Morehead said, "This case occurred at a time when cholera was present. It presents several points of considerable interest. The abdominal effusion, coexisting with a pleuritic effusion, was due in all probability to the kidney disease, not to the pre-existing and probably not recent peritonitis. *The incomplete collapse and the long course of the cholera attack* are to be attributed to the *replacement from the pleuritic and abdominal effusions* of the water of the blood lost in the intestinal discharges. It shows that endosmosis and exosmosis may go on freely from a serous surface studded with gray granular deposits." (The italics are mine.)

The case referred to by the late Dr Barlow is quite as striking, has the same prominent features, and, in spite of Bright's disease, recovered from cholera, and was discharged from Guy's Hospital free from dropsy (*Medical Times and Gazette*, 1866).

Doubtless in Dr Morehead's case the incomplete collapse, pulse remaining distinct till shortly before death, and the long course of the disease were due to the reabsorbed effusions.

I have quoted and referred to these cases as they seem to point out that, in our endeavour to feed a cholera patient in collapse, we should do it with such nutriment as shall be absorbed by osmosis, and also that the food should be present continuously, or as continuously as the contracted state of the stomach will allow.

As to the causation of cramp in cholera, there is little doubt that it results from a want of duly oxygenized blood to the muscles, and I think that the cramp in this disease may fairly be compared to the convulsive seizure which passes over animals when bled to death. Nay, more, it is not, I think, improbable that the characteristic vomiting and purging of cholera are due to contractions of the muscles of the stomach and intestine, caused by the early and immediate inspissation of blood in those parts, by the drain of serum into the intestinal canal, and necessarily a diminished supply of blood to muscles. I refer to these points, as in some cases which I treated with Liebig's raw soup (*Indian Medical Gazette*, 1st August 1866) cramps were not to any extent present, and both vomiting and purging were markedly diminished.

It must be evident (putting aside all vital action of cells) that osmosis will take place more rapidly in cholera than usual, as the density of the serum of the blood is so much increased, the solid constituents of cholera blood being 34 per cent. as the average of five analyses recorded by Simon, the solids of healthy blood being about 20 or 24 per cent. by the estimation of the same author.

The drain from the system caused by the morbific agent in cholera contains salts, extractives, and albumen as its chief solid constituents, and we should endeavour to replace these in any fluid nourishment we may give. No solid nutriment, nor one that requires change of any kind, is admissible, for the reasons I have already stated. Liebig's raw [1] soup seems specially, by its derivation (the muscular tissue of recently killed animals), adapted to supply what has been poured out from the vascular system. It contains albumen, extractives, salts, and some hæmatine as its soluble constituents. Its specific gravity is about 1015. Boiling gives one-third or two-fifths of flaky, not flocculent, albumen. But the property on which the *rationale* of its use is based is that it passes without digestion or any change into the blood by osmosis.[2] This is, I think, capable of proof by reference to cases which have subsisted on this soup by rectal injection for many days. The mode in which it is prepared must render its composition essentially an extract of the fluids of the muscular tissue, containing all the compounds much in the same state as when they were poured out from the blood to the tissues, except that a large quantity of water has been added. Indeed, when Dr Ogilvy (now deputy-surgeon-general) and myself were discussing its action in the first case in which it was used, he remarked that it seemed calculated to restore exactly what had been taken away. Its composition is not unlike that which analysis gives of passive peritoneal effusion; and though the sp. gr. of the latter is usually higher, yet Dr Morehead's and Dr Barlow's cases prove how readily these effusions are absorbed. Again, both these patients suffered from Bright's disease, and Dr Morehead's had a hardened, granular liver. Surely these affections rendered their chance of recovery worse, and yet the course of the disease was quite different from cholera generally, and this can only be attributed to the gradual absorption of the fluid effusions acting as diluents, perhaps as nutrients. It may also be said that the liver affection in Dr Morehead's patient rendered his chance of recovery nearly hopeless, when the changes which go on in the hepatic cells must have been so interfered with in the latter days of his life.

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[1] Ranking's *Abstract*, vol. xxi., p. 355.

[2] Whether its being uncooked makes it more easily assimilable by the blood is rendered highly probable by the fact of raw meat, as pointed out by West and others long ago, being specially useful in supporting the system in exhausting infantile diarrhœa.

A case of cholera, of which I published an abstract in the *Indian Medical Gazette*, already referred to, made a very deep impression on my mind. At 5 P.M. incomplete collapse had been present for two hours at least; a pulsation could now and then be felt at the wrist, but the pulse could not be counted; choleraic voice, sunken eyes, cold skin and extremities, were all present. A fowl was at once killed and rapidly made into soup. Two hours afterwards, when he had taken three or four doses of the soup, all was changed—the skin was warmer; pulse 120, easily counted; and all the other symptoms improved. But the *disease was not stopped*, as far as the distinguishing characteristics were concerned. The purging and vomiting continued for four days more, but it was manifest that collapse was gone, and that the patient was carried through apparently by aid of the soup. It was given in doses of a wineglassful every half hour; at least such were the orders. Arrowroot given at patient's request was at once rejected by vomiting.

Three other cases of type equally severe were admitted, one the evening of the same day, another on the next day (this last was moribund on admission), and the third on the day after. All these were very severe cases, and the two that recovered presented precisely the same course, except that the urine was completely suppressed for three days and a half after admission. Yet during those three or four days, though there was not much improvement, yet there was no falling back. There was no cramp, no cold sweat; the pulse remained distinct; the temperature of the body and extremities kept about natural. The patients slept at intervals comfortably, and slight vomiting and purging of the rice-water evacuations took place up to reaction; and in one case two colourless stools took place after a coloured motion had been passed. The other case admitted from the same camp died in two and a half hours after admission, having been collapsed eight or ten hours.

Subsequent experience confirmed what I have written as to these cases; but the disease broke out when we were marching, and the first three cases lacked the attention necessary, as they had to be carried for four or five hours in carts when in collapse. I have no precise notes of this outbreak, but there were some cases quite as severe as those to which I have previously referred, and the impression on the use of the raw soup left on my mind was equally favourable.

In the stage of collapse, besides the soup, I have always given as drink a solution of a drachm of chlorate potass in a quart of water well acidulated with nitro-muriatic acid, the order as to its administration being a wineglassful every one and a half or two hours. If more drink was required, it was only to be given in small quantities at a time,[1] but frequently repeated. I need scarcely add the well-known rule as to the danger of raising any patient up during the severity of the collapse and the subsequent weakness until reaction is well established.

It is perhaps worth trying the effect of injecting small quantities of this raw soup (rendered aseptic) into the veins and peritoneal cavity. If experiments on animals demonstrated its innocuousness, in extreme cases of cholera it might be tried. In the preparation of soup for vein injection the acid should be omitted, and the temperature of the fluid should be raised to at least 98° or 99°, and the injection should take place very slowly.

This preparation of Liebig's is not only very useful in Asiatic cholera, but in all diseases where there is a deficiency of assimilation. I have used it successfully in septic poisoning after operation, in pyæmia, in the worst cases of diphtheria, in typhoid fever, etc. I need not mention particulars, but may add that in a severe case of typhoid accompanied with blood in the stools, which medicines failed to check, the number of stools was at once reduced from four to five daily to one every two or three days for the next week. The blood ceased at once. The rationale of this result I attributed (whether rightly or not) to the almost absolute rest which it gave to the stomach and intestines, as no digestion was required. In this case it was given mixed with a small quantity of claret, in order that the wine might disguise its colour from the lady patient. It may be given to the youngest infant. It apparently saved the life of a child under three weeks old, when nothing else could be retained on the stomach. The irritative diarrhœa in this case was set up by giving the milk of an Alderney cow too little diluted with water. Diarrhœa was followed by urgent vomiting and a state bordering on collapse. Then a considerable number of large abscesses appeared over all the body, scalp, and upper extremities. After the use of this food for three days the infant was able to retain ordinary chicken soup, and it gradually recovered.

It has always seemed to me that the action of this aliment has been far better marked than that of any cooked soup or any dissolved extract of meat. One great advantage that it has is that it is always given in a very dilute and easily assimilable form. Its low sp. gr., as I have said, favours osmosis. I have known a patient, without orders from his medical attendants, eat nearly a pound of a fluid or semifluid fashionable extract of meat in twenty-four hours. It is needless to say that consumption to such an extent produced no benefit, and must have been a great tax on the mucous membrane of the stomach merely to dissolve it before it could be absorbed.

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[1] The reason why all fluids should be given in small quantities at a time is that the irritable muscular coats of the stomach and intestines should not be roused to action by distention. A case in which the friends of a patient gave a large dose, about 8 or 9 oz. at a time, was immediately affected with purging, and the raw soup was at once passed in the same *red* state as administered. The quantity administered at a time was reduced, and there were no more of the red alvine dejecta.

It would be of interest if we could experimentally determine whether there is any difference in the assimilation of cooked and uncooked flesh. There is no doubt that the raw soup specially stimulates the secretion of bile.

ARTICLE VII.—*Contribution to the Study of Simple Chronic Rhinitis and of Rhinitis arising from a Bodily Condition giving rise to Particular Forms (Rhinites diathésiques).* By Dr GOURJON. Translated by J. J. KIRK DUNCANSON, M.D., C.M., etc., Surgeon to the Ear Dispensary.

DR GOURJON examines successively, in his inaugural thesis, rhinitis, simple, scrofulous, syphilitic, arthritic, and herpetic.

The first remains limited to the nasal fossæ or occupies at the same time the pharyngeal cavity. Generally it affects the two nasal fossæ at once. The exception is almost always the sign of the presence of a foreign body in the nostril affected.

It may be a dry or a humid form; but whatever variety it may be, it is accompanied by a few of almost the same symptoms, pain in breathing, noisy nasal respiration, feebleness and even loss of smell, increase or diminution of the normal secretion. To these symptoms there falls to be added sometimes ozena.

The most generally observed predisposing cause amongst infants is scrofula; in the case of adults, the abuse of tobacco, or the congenital narrowness of the nasal fossæ.

A local examination enables us to make out a red colour of the mucous membrane deeper than in the normal condition; the phlegm is glassy, sometimes granular in adults.

One symptom which has to be added in some cases to the preceding is a red coloration of the tip of the nose, due probably, according to the author, to "compression of the bloodvessels of the epidermis of the nose from swelling of the Schneiderian membrane." Simple chronic rhinitis is generally cured, but it sometimes leaves a hypertrophy of the turbinated bones which is the origin of polypoid growths. As to the consecutive abscesses, he has attributed them to a bad constitutional influence, not properly understood. Chronic rhinitis of scrofulous origin resembles the preceding in its symptoms, but differs in its termination. The ulcerations, primarily superficial, attack successively the deep pouches, and frequently cause perforation of the septum; the nose sinks down, and presents these characteristic deformities.

This variety is accompanied with a fetidness of the nasal mucus, and is one of the primary manifestations of scrofula.

The pox, says M. Fournier, is at home in the nasal fossæ—that is to say, that syphilitic rhinitis is common.

It is serious with infants at the breast. The mucosites, extremely abundant, impede the nasal respiration, and from that cause alimentation is often impossible. This is sometimes the only manifestation of syphilis amongst those who inherit it.

In the adult, if it is not arrested at the catarrhal period, it arrives progressively at the destruction of the bones.

Arthritic rhinitis is very rare in infancy, less frequent in adolescence, and common in the adult. It is specially characterized by the presence at the entrance to the nostrils of pustules very closely resembling those of sycosis or acne. Herpetic rhinitis, independently of the characteristics which are common to it and the other forms of rhinitis, is distinguished by an extreme tenacity and viscosity of the nasal mucus, "whitish and flabby, like a piece of albumen."

The treatment of simple rhinitis should consist in irrigations of the nasal fossæ and the insufflation of astringent powders.

Constitutional rhinitis, whilst we employ local treatment, demands an active intervention which tends to modify the general condition.

The thesis of M. Gourjon is written with method and clearness. It contains very interesting bibliographic notices and observations. It is a conscientiously performed work, which will always be useful to consult.—Dr HERMET, *Annales des Maladies de L'Oreille, du Larynx, et des Organes connexes*, Vol. iii. No. 3, pp. 160–162.

Part Second.

REVIEWS.

A Treatise on the Materia Medica and Therapeutics of the Skin. By HENRY G. PIFFARD, A.M., M.D., Professor of Dermatology, University of the City of New York, etc. London: Sampson Low, Marston, Searle, & Rivington: 1881.

THIS volume forms one of the series of "Low's Library of Standard Medical Authors." With the index it forms a volume of upwards of 350 pages, and will become a standard work on the therapeutics of affections of the skin. The work is a valuable contribution to medical literature, and displays great research on the part of its author. In a brief introduction he gives very clearly the general scope of the work.

It consists of two parts, one devoted to materia medica, and the other to therapeutics. The various medicines available in the treatment of cutaneous affections are arranged alphabetically, a very convenient one in a work of reference. He gives, first, the action of the drug internally on the skin in health; secondly, its action on the healthy skin when applied locally; thirdly, the cutaneous affections in which the drug has been found useful when taken internally; and lastly, the diseases in which the drug has been found efficacious when applied locally. He thus gives very properly the physiological actions of the drugs, local and general, and their applications to the treatment of diseases. Dr Piffard also, in most cases, gives the authorities and the works, and pages of the works, where such references are to be found. The second part of the book treats of the various cutaneous affections and their treatment. This part of the work is well arranged, and the descriptions of the various diseases are generally concise and accurate. We have much pleasure in commending this treatise to our readers, feeling assured that it will be read with profit alike by students and practitioners.

Syllabus of Materia Medica, for the Use of Students, Teachers, and Practitioners, based on the Relative Values of Articles and Preparations in the British Pharmacopœia. By ALEXANDER HARVEY, M.D., Emeritus Professor, and ALEXANDER DYCE DAVIDSON, M.D., Regius Professor, of Materia Medica in the University of Aberdeen. Fifth Edition. London: H. K. Lewis: 1881.

ON a former occasion we expressed our opinion of this excellent syllabus. The book contains a well-written introduction by Professor Harvey, in which he gives many valuable suggestions regarding the teaching of materia medica. We are glad to see that it has reached a fifth edition. We regret, however, that the authors still insist on ascribing to the articles of the materia medica their relative values without being more careful in assigning these values. We admit that there is much room for difference of opinion in regard to the relative values of the medicines of the British Pharmacopœia. On the other hand, there are many assigned values in this syllabus which no professor or teacher out of Aberdeen will be likely to ascribe to them. Passing over such instances as citric acid being regarded as a substance of "the highest value," we would mention a few substances regarding which we hope no student or practitioner will accept the values assigned them by Professors Harvey and Davidson.

Ammoniæ benzoas is classed as a medicine of only *third*-rate value, which surely is not the value of a medicine possessing such cholagogue properties. *Sodæ sulphas* is also regarded as a medicine of only third-rate value, whilst the sulphate of magnesia is classed as a medicine of the highest value. This is not what one would expect when it has been clearly established that the soda salt has a powerful action on the liver, whereas the magnesia salt is not a hepatic stimulant, but lessens the secretion of bile by means of its purgative action. We would not regard the ointment of tartar emetic as a preparation possessed of a "*higher* degree of value." We find *vinum ferri* marked as a medicine of a "*higher* degree of value," a preparation which contains only traces of iron, and is not always made from the best sherry. *Ferri iodidum* is marked as of the highest value, a medicine which is seldom, if ever, prescribed in the treatment of disease, and is so unstable as a chemical compound that it cannot be used for making either the pill or syrup. We cannot understand on what principle the seed of the *bitter* almond is marked as a medicine of the second value, whilst the seed of the *sweet* almond is mentioned as one of the fourth or lowest value. The seed of the *bitter* almond is only used in medicine for the expressed oil obtained from it. The seed of the *sweet* almond also yields this expressed oil, and, in addition, furnishes the *pulvis* and *mistura* of the British Pharmacopœia.

We might direct attention to other defects, but we have said enough to put students on their guard in trusting much to the relative values ascribed to the various medicines in this syllabus.

The Climate of the Undercliff, Isle of Wight, as Deduced from Forty Years' Consecutive Meteorological Observations. By J. L. WHITEHEAD, M.D. London: J. & A. Churchill: 1881.

THE reputation of the Undercliff as a health-resort—more particularly in consumption—is well established, and has been maintained for centuries, notwithstanding the formidable competition of numerous places both in this country and elsewhere. The explanation of this is furnished in this *brochure* by very elaborate and, we have no doubt, reliable statistical tables, kept during forty years—1840-79 inclusive—by the late Dr Martin of Ventnor and his brother. These tables exhibit an average temperature, mild during the winter, and cool during summer; while the mean rainfall was 28·80 inches. The situation—about seven miles in length, and of an average breadth of a third of a mile—is very favourable as regards protection from cold winds, and by its sunny exposure, with pure sea air unmixed with any land breezes. The supply of water is both abundant and pure, and it is very satisfactory to know that the drainage was thoroughly examined last year by the local government inspector, Dr Ballard, who caused all suspicious wells to be closed, and everything likely to interfere with the sanitary condition of the town and neighbourhood to be inquired into and removed.

Throat Diseases, and the Use of the Laryngoscope. By G. W. DOUGLAS HEMMING, F.R.C.S. Ed. London: J. & A. Churchill.

THIS little work, which is issued as a handbook for practitioners and senior students, makes, as the author states, little pretension to originality, much of the work—most, in fact—being derived from the writings of previous authors.

The arrangement of the subjects treated of is much similar to that followed by most other writers, and there is, in fact, nothing particularly noteworthy to remark as new to the profession in its pages. The subject is treated of comprehensively as regards current literature, the author referring more than once to the most recently published papers in the various medical periodicals and journals.

The woodcuts which illustrate the text are by no means very excellent.

This little work may be useful as an occasional aid to memory, but does not, we think, do more for the author than indicate that he can use the laryngoscope and is well read in the subjects treated of.

Ozena and its Clinical Forms. By Dr VINCENT COZZOLINO. Naples: 1881.

OZENA, says Dr Cozzolino, signifies no longer, since the advancements of rhinoscopy, "ulcer of the nasal mucous membrane," and we cannot give this name to all the vital lesions of the mucous membrane and of the bony part of the nose accompanied with fetor; but we ought to give the name ozena to those affections which do not present any apparent vital lesion and any loss of substance.

The external form of the nose has little influence upon ozena, but we especially notice the abnormal aspect of the nasal fossæ. For example, in place of the usual fissure between the middle and inferior turbinated bones and the septum, we have a veritable antrum, in consequence of the almost complete absence of these two bones, and especially of the inferior, reduced to a simple fold, at times allowing us to see the faucial opening of the Eustachian tube.

Dr Cozzolino divides ozena as follows:—

1st, Constitutional or scrofulous ozena of the nasal mucous membrane.

2nd, Atrophic rhinopathy, simple or catarrhal.

3rd, Ozena with fetid exhalation, *sine materiâ.*

I. *Constitutional Ozena.*—The author refutes the opinion of Michel of Cologne, according to whom ozena has its origin in chronic catarrhal-lesion of the ethmoidal and sphenoidal sinuses, without ulceration of the mucous membrane, and without alteration of the osseous tissues. On the contrary, it appears to Dr Cozzolino that ozena arises in the whole nasal mucous membrane. He does not believe that the sinuses above referred to are primarily attacked with catarrh independent of the intermediate nasal fossæ. In fact, he is convinced that ozena is born ozena, and that it is not a degeneration of any other malady. The fetidness of ozena does not proceed, as Michel says, from the stagnation of the secretion in a cavity which facilitates decomposition; indeed, stagnation is not necessary to produce the stench, but the contact of the atmosphere suffices to alter the secretions if they are not renewed.

Michel affirms that he cannot explain the tenacity of the disease if the mucus of the nasal fossæ alone is affected. Cozzolino replies, "In admitting, as we do, that ozena is a scrofulous affection (scrofulide) of the mucous secreting surface, the tenacity is completely explained. I affirm that the secretion, or rather its products, greenish-yellowish crusts, directly depend upon the scrofulous diathesis, without there being any need of a catarrh. The latter can exist, especially under the torpid form, but accidentally, or depend on the chemico-physical action of the crusts. Similar lesions, affecting the whole of the mucous membrane of the nose, can invade the sinuses as well; but they cannot absolutely represent the only seat of the ozena, because we have learned from pathology and the clinique it is not the superior ethmoidal and sphenoidal sinuses which are the most subject to the disease, but the maxillary and frontal sinuses.

The author gives afterwards a very minute table of all the various physico-organic conditions, mechanical or morbid, of the nasal fossæ which can exhale, or do exhale, this fetidity.

II. *Ozena from Atrophic Rhinitis.*—This form is seen at all ages, but chiefly in adolescence and youth. Without being an immediate product of scrofula, as constitutional ozena, it is grounded on a scrofulous diathesis. It is a necessary phase of certain cases of chronic rhinitis, by means of a slow phlogistic process which affects the mucous membrane, and more especially the glandular apparatus. Every case of chronic rhinitis does not produce ozena, except those cases of rhinitis special to scrofulous individuals.

The catarrhal process, chiefly of this second form, can affect not only the mucous membrane, but also the sinuses, although very rarely. Herpes and arthritis can also serve as a source of ozena through atrophic rhinitis; but their fetidity, depending always upon the stagnation of the mucus and of the crusts, is different from that of constitutional ozena; it is less loathsome, and can be compared to a pocket handkerchief impregnated with nasal mucus which has lain several days. The prognosis of this form is favourable enough, more especially if the catarrh has not completely arrived at the atrophic period; but the results, if they are more durable, are not so prompt nor so satisfactory as in constitutional ozena.

Heredity in ozena from rhinitis atrophica is much rarer than in constitutional ozena. The morbid process in this clinical form is insidious, and often escapes the notice of the patient. It is, besides, complicated with a physico-chemical process which gives to the secretions their gelatinous appearance and their fetid odour.

Dr Cozzolino passes in review the various authors. He proves that Zaufal admits the atrophy of the turbinated bones; Gottstein, that of the glandular system. He attacks their opinions where they are contrary to his own. We cannot follow him in all his details: we would only allow ourselves to remark that a little more clearness in the exposition of his ideas would be desirable.

The difference between the two first forms of ozena admitted by Cozzolino is not described in a manner sufficiently clear to avoid all confusion.

III. *Ozena from Fetid Exhalation, sine Materiâ.*—This form of nasal fetidity, rarer than the two preceding, denied by some, put in doubt by others, has been admitted by Hédénus of Dresden and noticed by Dr Cozzolino. The fetidity is exhaled by the mucous membrane without secretion—that is to say, by simple gaseous exhalation.

Frænkel combats this opinion, and regards as indispensable the existence of the secretion for the production of the fetidity. Relying upon the researches of M.M. Baruel (" Aromatic Element of the Blood," *Arch. Gener. de Med.*, 1829, vol. xix. p. 302), Robin (*Chimie Anat.*, Paris, 1853, vol. iii. p. 481, art. " Odoriferous Elements "), Parmentier et Deyeux, G. Polli, Semmolla, Dr Cozzolino shows that from the chemistry of the organism alone, without clinical observation, we learn that there are individuals who naturally have fetid secretions against which the most scrupulous cleanliness is powerless, as, for example, the sweat of the feet, of the armpits, etc. This fetidness can be attributed to certain heavy-smelling volatile salts and acids, to the putrefaction of epithelial cells, etc.

The diagnosis of ozena by exhalation is difficult. We would recognise it by the following characters:—Almost normal appearance of the mucous membrane, save that it is a little redder; absence of all kinds of greenish, yellowish, whitish, grayish, gelatinous, etc., crusts; normal fulness of the nasal fossæ, and regular form of the nose, but excessive fetidity.

Of all the forms above described, ozena by exhalation is the most tenacious, forasmuch as its sources are found in greater numbers in the chemical than in the organic laws of the human economy. It is a product of an anomaly of the liquids more than of the solids, presenting, in consequence, a lesser field of action for medical treatment, general or local.

After having described the three different forms which he admits in ozena, Dr Cozzolino discusses the opinion of Dr Rouge of Lausanne on the subject of an osseous ozena.

At the Medical Congress in Geneva, 1877, Rouge maintained that the want of success in the ordinary treatment of ozena proves that this malady is not represented by a fault of the secretion or of ulceration of the pituitary membrane, but by some osseous lesion of the nasal fossæ or their annexes, having its seat upon one of the walls of the cavities, or more likely in the sinuses and cells of the ethmoid.

Cozzolino objects that the bony lesions of the skeleton of the nose are not represented of themselves as a separate morbid entity. Like all the other lesions of the skeleton, they can be referred to diatheses, such as syphilis, scrofula, etc. Thus, like the various caries or necroses, they diffuse their fetidness, more insupportable, if you will, because it is communicated by the expiration. If for these other forms we can say constitutional ozena, ozena from atrophic rhinitis, here it is necessary to indicate the pathological nature of the osseous lesion. This is why we say caries or necrosis of the vomer from syphilis, in place of syphilitic osseous ozena; we say the same, caries or necrosis from lupus, in place of osseous lupoid ozena, etc., etc.

In the therapeutic part of his work the author passes in review the various treatments employed for the cure of ozena by foreign practitioners—Tillot, Rouge, Michel, Bardenhuer of Cologne.

Cozzolino recommends, in the first place, Weber's nasal douche for detersive injections, besides four instruments of his invention, which he calls anterior nasal syringe, posterior nasal syringe, internasal insufflator, internasal inhaler.

He employs tepid saline water with which to wash out the nostrils with the douche, and extols inhalations of vapour of iodine and of turpentine. He has treated with success constitutional ozena by means of calomel in powder and the iodoform pomade,—

Calomel, . .	2 grammes	=	about ½ drachm.
Benzoate of soda, .	115 „	=	„ 3½ ounces.
Salicylate of soda, .	1 „	=	„ 15 grains.
Thymol, . .	5 centigrammes	=	nearly 1 grain.
Iodoform, . .	2–4 grammes	=	„ ½ to 1 drachm.
Vaseline, . .	15 „	=	„ 3¾ drachms.
Tannin, . .	5 centigrammes	=	„ 1 grain.
Essence of roses, .	4 grammes	=	„ 1 drachm.

He recommends prudence in the application of mercurials, and attaches particular importance to a general antiscrofulous treatment.

For ozena from atrophic rhinitis he recommends benzoic acid, certain mineral waters in douches or in powder, such as the water of Saint Christau, justly extolled before him by Dr Tillot, and that of Casamicciola, etc.

He is no partisan of the tampons of cotton-wool of Gottstein, and prefers to them medicated bougies of gelatine of a form invented by himself—a conical form and 3, 4, or 5 centimetres in length, adapted to the calibre of the nasal fossæ. The object of these gelatinous bougies is that they may remain upon the diseased surface in order to obtain their full action. They are made up with the following ingredients:—

1st, *Astringent or Anticatarrhal Gelatinous Bougies.*—Subnitrate, tannate, and salicylate of bismuth, pure tannic acid, sulphate of zinc, and sulpho-carbolate of zinc.

2nd, *Emollient or Solvent Gelatines.*—Chloride of sodium, chlorate of potash, chloride of ammonium, neutral alkaline carbonates, employed to dissolve the inspissated secretions in some cases of dry rhinitis.

3rd, *Modifying or Resolving and Specific Gelatines.*—Preparations of iodine and of mercury, as, for example, iodoform, calomel, or red precipitate. For specific cases, the iodide of sulphur in herpetic lesions, and corrosive sublimate in syphilitic affections.

4th, *Antifetid or Disinfecting Gelatines.*—Vegetable charcoal, thymol, salicylic acid, and phenol.

The washing ought always to precede the application of the gelatines and the insufflation of medicated powders. The gelatines are applied alternately in each nasal fossa, especially in the evening. In the morning we ought to introduce the bulb of the nasal douche in the opposite nostril to that in which the gelatine had been applied the previous evening.

IV. As to the treatment of ozena by exhalation, we can combat it only by palliatives, such as antifetid douches, absorbent powders, etc.

Concerning osseous ozena, admitted by Dr Rouge, Cozzolino describes it with a figure to illustrate the surgical operation, well known to the medical profession in Lausanne, which consists in opening up extensively the nasal fossæ so as to obtain an exact view of the seat and extent of the lesions. He finds this operation dangerous, and would not employ it except in a desperate case.

To sum up our opinion of the work of Dr Cozzolino, we will say that he has appeared to us very conscientious and as complete as the restricted size of the brochure permits him. The style is lively and convincing; perhaps it would have charmed one more had it been a little more concise.—Dr H. GOURJON, *Annales* *des Maladies de l'Oreille, du Larynx, et des Organes Connexes,* No. 3, vol. vii. pp. 154–160, *Translated by* J. J. KIRK DUNCANSON, M.D., C.M., *Surgeon to the Ear Dispensary.*

Chronic Catarrh of the Nasal Fossæ and of the Pharynx. Clinical Study, by Dr MAX BRESGEN of Frankfort-on-Main. Urban and Schwartzenberg: Vienna and Leipzig.

TO bring down the velum palati for the purpose of making a diagnosis by aid of the mirror, the author prefers to make use of the index finger of the left hand. Except that the procedure may not be so agreeable, it will, however, offer less inconvenience than that so highly recommended by Voltolini, consisting in the employment of a hook by means of which the velum palati is drawn forward.

That which specially renders difficult the examination of the naso-pharyngeal cavity with the speculum is the existence of a chronic catarrh of the mucous membrane, and hyperæsthesia which is the consequence. We will get rid of the hyperæsthesia by painting the throat with iodine glycerine (iodine, 0·5–1·0; iodide of potassium, 2·5–5·0; glycerine, pure, 25·0). Three paintings are generally necessary, and it is only after three days that we obtain sufficient insensibility. During this time it is necessary to deny the patient the use of tobacco, of spirits, and of strongly spiced foods.

The nasal funnel of Zaufal is not practicable.

Chronic catarrh of the nasal fossæ may be the consequence of a frequently relapsing acute catarrh, especially in scrofulous individuals. With infants the catarrh is often chronic at the first onset.

Syphilis would not be a predisposing cause; it could only be localized in the nasal fossæ when they are already affected with catarrh. Polypi of the nasal fossæ are not the cause, but the consequence, of chronic catarrh. This catarrh is also caused by hypertrophy of the uvula and of the tonsils when it is so pronounced as not to permit the passage of air by the nose; in these circumstances the mucous membrane is softened, the secretion increases, etc. Other causes: the warm air of apartments, smoke, the habit of smoking, of snuffing.

Bleeding from the nose is a sure symptom of a slowly developed catarrh. Another symptom equally certain is a permanent and abnormal redness of the external surface of the nose. This redness decreases at the same time as the swelling of the mucous membrane.

The author rarely employs injections as a curative means; he has recourse to them only in cases of fetor, and then he employs them in the form of solutions of bicarbonate of soda, of chlorate of potash, or of ordinary salt, used at a genial temperature. Cold water is injurious, and warm water weakens the mucous membrane. The principal therapeutic means of the author is the insufflation into the upper parts of the nasal fossæ of a mixture of nitrate of silver and starch of 0·5 to 10 per cent. In mild cases the effect is at least as rapid as by the galvano-cautery, which he reserves for cases of considerable inflammations of the mucous membrane. As to plugging after the method of Gottstein, it is, according to Dr Max Bresgen, too inconvenient for the patient to be able to endure it for any length of time.

Chronic catarrh of the pharynx should be treated by the galvano-cautery, and the glycerine iodine applied with a brush.

Contrary to the general opinion, chronic catarrh of the nasal fossæ and of the pharynx can be cured in the greater number of cases; but the cure can only take place at the end of a sufficiently long time, several months, and even several years.—*Translated by* J. J. KIRK DUNCANSON, M.D., C.M., *Surgeon to the Ear Dispensary.*

Part Third.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

THERAPEUTICAL EFFECTS OF OXYGEN.—M. E. Hagen, in a report to the Academy of Sciences, gives some facts regarding the physiological and therapeutical effects of oxygen. It is taken in doses of forty to ninety litres per day in two doses, and mixed with a very small amount of air. It augments the appetite, slightly elevates the temperature, accelerates the circulation, temporarily increases the red corpuscles and the hæmoglobin in the blood, and increases the weight of the body. It stimulates the nutritive movement of the tissues, and increases thereby the excretion of urea. In *chlorosis* it is a useful adjunct to iron. It stands in its actions much in the same way that hydrotherapy does. In *vomiting* it is especially valuable. After one or two inhalations, vomiting will generally stop permanently, if it be not due to organic disease. Vomiting is relieved by oxygen when due to painful dyspepsia, dyspepsia with dilatation, vomiting of pregnancy and of uræmia. —*New York Medical Record*, June 1881.

NITRATE OF SILVER IN SCIATICA.—Subcutaneous injection of nitrate of silver has been strongly recommended and frequently employed by M. le Dentu, of the St Louis Hospital, in the treatment of sciatica. The following is a case that succeeded in the hands of Dr Greslon:—A woman æt. 53, of a rheumatic diathesis, suffered from all the classic symptoms of sciatica in the left leg. The whole member, from the external malleolus to the sacro-sciatic notch, was the seat of lancinating pain, which lasted a month. All the ordinary means being used, but without effect, the patient consented to the subcutaneous injection of the agent in question. Five drops of a solution (1 in 4) was injected in upper and back of the thigh, at a point corresponding to the exit of the sciatic nerve. This injection was immediately followed by great pain, and an abscess formed, giving exit to a teaspoonful of pus. Three or four days afterwards the patient was able to get up and walk about, all pain having left the leg. However, the point corresponding to the sciatic notch remained as sensitive as before, and another injection was practised, which was not followed by an abscess, and in a week the cure was complete. This case is not only interesting from the rapidity of the cure, but also from the fact that the subject was rheumatic, and consequently was unfavourable as to prognosis. —*Medical Press and Circular*, Oct. 12, 1881.

CODEIA IN THE TREATMENT OF DIABETES.—Dr Smith said that opium had been empirically used in the treatment of diabetes from the time of Aetius. In recent times the action of the drug had been investigated by Pavy and others, with the result of showing the practice to be the result of well-established experience; and observers had endeavoured to ascertain to which of the alkaloids of opium the beneficial result was due. Codeia was first recommended by Pavy on the ground that it could be given in large doses without producing drowsiness. Of late it had been much used, as recommended by Dr Saundby, in the cough of phthisis, where it gave great relief, and had an appreciable soporific effect. But it was in diabetes that codeia had been of greatest service. As regards the dose, small doses were recommended by some authors; but Dr Brunton stated that it might be given in doses of a quarter to half a grain three times a day at first, the medicine being increased gradually until sugar disappeared from the urine, or increasing drowsiness demanded its discontinuance. Dr Pavy had given a series of cases in *Guy's Hospital Reports*, showing the beneficial effects of opium, morphia, and codeia in removing sugar from the urine, the advantage of codeia being that it did not produce the same narcotic effect as opium and morphia. Opium was given in doses up to nine grains, morphia up to three grains, and codeia up to ten grains three times a day. Dr Cavafy had given fifteen grains thrice daily with good results. Dr Smith considered that alkalies and all other treatment, even dieting, were inferior to codeia as remedies for diabetes, and that in this disease it might be considered almost a specific, and should be the first remedy tried, and should be given in fairly large doses until some physiological effect was produced. Codeia had been said to produce convulsions; but the literature of the subject did not support this, and he had never seen any such effect. He related three cases which all exhibited marked improvement while taking codeia, which improvement ceased when the codeia was withheld, and was renewed on its repetition. Morphia had a good effect in two of the cases, but the improvement was much less marked than with codeia. (R. Shingleton Smith, M.D., Clifton.)—*The British Medical Journal*, 17th September 1881.

BISMUTH AND HYDRASTIA FOR THE LOCAL TREATMENT OF DISEASED MUCOUS MEMBRANES.—This preparation (a solution of the ammonia-citrate of bismuth and the colourless alkaloid of Hydrastis canadensis) certainly supplies a need long felt by the profession. I have found it of the greatest benefit in a variety of diseases, more especially certain lesions of mucous membranes. In chronic follicular pharyngitis I have found it to act curatively with rapidity. Cases of gonorrhœa and gleet under my care have been cured by its topical use, (some of them) after having resisted other treatment. I have tried it in only one case of diphtheria; and although I did not rely on it alone, yet I am confident the patient recovered more rapidly than would have been the case if the bismuth and hydrastia had not been applied topically and frequently. The combination deserves an extensive trial, as it is so mild in its action, attended by such positively beneficial results, and therapeutically applicable to such a variety of abnormal conditions, that I, for myself, am thankful for the introduction of so convenient, elegant, and potent a remedy. (Dr J. B. Garrison.)—*Indiana Medical Reporter*, May 1881.

HOW TO ADMINISTER SOLUTION OF CHLORIDE OF IRON.—Dr Hager suggested the method below given, in which, however, the chloride is converted into a compound of ferric iron with proteïn bodies. This is not objectionable, since the chloride, when taken into the stomach, is converted into such a compound there, and it is supposed to make no difference whether this compound is formed immediately before being taken into the stomach or afterwards. The best way of taking the solution is to dilute it with glycerine or syrup, then to mix, just before taking it, with cow's milk. In this form it neither injures the teeth nor has it the usual iron taste. Another method would be to mix dialyzed iron and milk. —(*Pharm. Centralb.*, 1880.)—*New Remedies.*

A SUBSTITUTE FOR CARBOLIC SPRAY.—The purpose of the present paper is to give the results of some experiments which have extended over a period of several months, and which were undertaken in the hope of bringing before the notice of the profession a substitute for carbolic spray, now used in antiseptic surgery. The

experiments related go far, in my opinion, to prove that in the vapour of eucalyptus, cajuput, and other similar volatile fluids, we have powerful antiseptics, which, at the ordinary temperature of the atmosphere, may so saturate the air as to kill all infective particles, perhaps not only bacteria and micrococci, but also the germs of fevers and other infectious diseases. In a chamber regularly used for operating there would be no difficulty in having a large pair of bellows, worked by hydraulics, to pump a continuous stream of air, which might be carried to any part of the room by means of a flexible tube, the air having been forced through two or three wash-bottles containing pumice-stone and the volatile oil, cajuput or eucalyptus. If the end of the tube have a large bell-shaped opening, the current of air will diffuse itself over a radius of many feet. Perhaps there may be no need for an apparatus if it can be proved that the air of a room saturated with the vapour is freed from germs, for then all that would be necessary would be to have some evaporating dishes containing the volatile antiseptic distributed in the operating chamber. In cold weather, or if the air will not absorb a sufficiency of the material, the current might easily be heated before passing through the wash-bottles; and in the chamber a little heat could easily be applied to the evaporating dishes. I hope, before long, to give some further results of trials with oil of peppermint, terebene, and other volatile bodies. (A. W. Mayo Robson, F.R.C.S. Eng., Lecturer on Pathology in the Leeds School of Medicine.)—*British Medical Journal*, October 15, 1881.

DIGITALIS.—In the Philadelphia County Medical Society, Dr H. C. Wood, in opening the discussion, referred to the current views in regard to the action of digitalis upon the nervous apparatus of the heart, and claimed for it a peculiar effect upon the heart muscle. This influence, which has been fully demonstrated by physiological experiment and sustained by clinical observation, renders digitalis particularly serviceable in the condition of heart disease in which the increased work required of the heart is greater than the increase of the power, without regard to the particular valve which may be affected. It improves the nutrition of the heart by regulating its contractions and lengthening the diastolic interval, doing away with the rapid, imperfect contractions which interfere with the blood-supply of the cardiac muscle. In such cases the nutrition of the heart suffers, because it is necessary to have lateral distention of the aorta in order to fill the arteries in the muscular tissue. A little digitalis steadies the heart, and therefore improves its condition and retards degeneration. In chronic valve trouble of the heart digitalis is serviceable, and sometimes must be given in large doses. A half-dram dose of the tincture apparently saved from impending death two cases of advanced heart trouble coming under the speaker's observation.

They afterwards got well enough to attend to their business. It enables the heart to gather up its strength, and keeps it going until the last. By the surgeon digitalis is often used improperly. Thus it is not rarely given in aneurism, where the great danger is from increased lateral pressure, not want of forward pressure. In one case coming under his observation digitalis caused the rupture of an internal aneurism at the hospital. The patient had been brought in without any diagnosis, and no one had suspected aneurism. In acute diseases with failing heart digitalis may be employed. Such a condition may occur in asthenic or in the advanced stages of sthenic pneumonia. In the early stage of sthenic pneumonia it is improper to give it. Such a medicine as veratrum viride, which produces vasomotor paralysis, is indicated, so "as to bleed a man into his own tumours." Blood is drawn to the lungs because there is there a local vasomotor palsy. Produce a general vasomotor palsy, and the local attraction ceases. When the lung is consolidated throughout a large extent the heart is overworked. By-and-by it begins to fail; the pulse gets rapid and feeble. Now digitalis comes into play. It will save a life in such a condition, when the patient without it must die. Take the case of a drinking man seen a few days since, suffering with pneumonia, pulse 150 to 160, respirations 60 to the minute, delirium persisting for two or three weeks, expectoration of pure blood, etc. This man was given ten minims of tincture of digitalis every two hours, day and night, until the pulse fell to 60, when the digitalis was stopped, and resumed as the pulse went up. By the aid of milk and whisky the patient was saved. Two points in conclusion: (1) in regard to the cumulative action; (2) in regard to the slow action of digitalis. The remedy acts slowly in producing its full effect, and its effects are very permanent when they do appear. Some agents act more quickly than others. Digitalis acts slowly and cumulatively, not only because of its special influence upon the heart, but because it only comes very slowly in contact with the heart structures, since it osmoses slowly into and out from the body. Where it fails to act upon the kidneys it is more apt to act cumulatively upon the heart. The practical point is this: watch the kidneys when giving large doses of digitalis. If water is not passed freely, the cumulative action will be apt to occur. In a case of chronic pleurisy Dr Wood tried to run off the water by the kidneys. The pulse ran down steadily from 70 to 40 in four days after the medicine had been withdrawn. It was a long time before the effect of the digitalis was manifested, and it was long before it ceased to act. In the pneumonia case, after the pulse began to drop, it was eighteen or twenty hours before it again reached the normal. The longer the digitalis is in acting, the more likely it is to have a lasting effect. After abdominal tapping the digitalis often shows itself in reducing the heart's action. Either the digitalis has been lying in the intestines unabsorbed, or in the cellular tissue

Probably all the fluids are saturated with the drug. Digitalis is a very useful remedy in cases of syncope and collapse. Formerly alcohol alone was used. One of the advances of modern therapeutics was to teach the danger of giving large doses of alcohol in cases of surgical shock. Belladonna and digitalis are proper remedies given by the hypodermic injection. The pulse begins to fill up in twenty minutes or half an hour. No irritation is produced at the point of puncture. Throw in twenty minims of the tincture at once, and expect to find the result in half an hour. He did not wish his remarks to be understood as declaring that digitalis was entirely without danger; but he had used it in hundreds of cases, and had seen men apparently dying revive under its effects. It is important to stop it as soon as evidence appears in the pulse that it is beginning to be absorbed. Used in this way, he did not believe that there would ever be any serious cases of poisoning with it. Dr W. R. D. Blackwood said he had used it very largely in delirium tremens. He considered it important to watch the kidneys, especially when using large doses. In old topers he had given half-ounce doses of the tincture, and in one case he had used this dose for eight repetitions, an hour apart. He believed that this patient had been kept alive for six years by digitalis.—*The American Practitioner*, August 1881.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

(Continued from page 282.)

III. The Effect of Remedies on the Mucous Membrane of the Larynx and of the Air-Passages, as well as on the Mucous Secretion itself.—The mucous secretion is, through the internal administration of apomorphin, emetin, and pilocarpin, considerably and in a distinctly visible degree increased most markedly by pilocarpin, from which, not only in the trachea, but also in the bronchial ramifications, there flowed out so profuse a production of extremely fluid, clear as water saliva, that from the entire thorax of the animal we could hear extensive rattling noises, and the mucus, as in œdema, filled the larger bronchi, flowing copiously out, during life, into the trachea. In order that none of the greatly increased flow of saliva might reach the larynx and thereby give occasion to deception, the larynx was previously plugged with sponge. The vascularity of the strongly secreting mucous membrane showed no difference from the previously normal condition, but the mucous follicles were so increased in size that they projected as little knots on the smooth surface of the mucous membrane. To make sure that the medicine did not act indirectly through some influence of the circulation, but that it developed its action directly by acting on the glands and their nerves, was proved by what took place after tying all the more important vessels supplying the trachea, of the larger branches of the carotid on both sides, and of the thyro-cervical trunk. The injection of pilocarpin, notwithstanding the shutting out of the blood-supply still caused an increased secretion of mucus.

The secretion of mucus is completely arrested by atropin, so that the mucous membrane, previously very moist with mucus, is absolutely dry. Notwithstanding this dryness,—perhaps also by the action of the atropin,—the mucous membrane was more hyperæmic during the period of observation. The secretion of mucus remained away for more than half an hour, a proof that atropin does not act by disturbing the circulation, but by direct action on the glands and the secretory nerves.

The alkalies act in two ways, according to the method of employing them, at least those employed by us, carbonate of soda and sal-ammoniac. If we inject two grammes of the former, one gramme of the latter, directly into the blood (into one of the veins of the leg), almost immediately the mucous secretion of the trachea is significantly abated; in some cases, indeed, it ceases entirely: besides, the mucous membrane is bloodless.

On the other hand, if we bring the alkalies in a watery solution by dropping them directly upon the mucous membrane itself, the mucous membrane is reddened and the mucous secretion augmented. This is seen most intensely by direct application of a very strong dilution of liquor ammonii caustic., after which a very intense hyperæmia and dilatation of the smallest vessels and free secretion of mucus took place. We can also affirm that by stronger concentrations distinctly croupous membranes were formed on the mucous membrane after the lapse of one day.

Oleum terebinthinæ rectif. showed a different action as it was applied in watery solution or simply mixed with air in small quantities. If we blew air upon a fixed portion of mucous membrane by means of a simple apparatus into which, by means of a glass, the oil of turpentine had previously been conducted, and therefore had been as much as possible filled with the vapour of turpentine, the mucous secretion gradually diminished, finally completely stopped, and the mucous membrane was at this particular point quite dry. As soon as we ceased this blowing, the mucous secretion began again. Experiments made to control mistakes by blowing ordinary air with the same force showed that, in consequence of the stimulus of the strong current of pure air, the mucous secretion was increased, thus showing that the observed dryness in the turpentine experiment was in consequence of the mixing the air with turpentine. In comparison a one to two per centum watery mixture of turpentine was brought in contact with mucous membrane, which at once began to secrete strongly, but showed at the same time a diminution of the blood-supply. The mucous membrane remained dry after the application of undiluted ol. terebinth.; it became wrinkled and shining red; the epithelium was raised from its basal membrane, in which changes took place which one was at first inclined to consider croupous patches; most distinct ecchymoses arose.

Acids:—Acetic acid caused by local application a strong formation of mucus. After internal administration we noticed no change in the quantity of mucus secreted, but a quicker running together into a ball of the thin fluid and clear mucus welling out from the glands.

For the hitherto so neglected methods of treatment of the different catarrhs of the mucous membrane of the air-passages there follow from the above researches sufficiently definite indices, which we will more fully discuss in another place.—*Contributions to the Physiology and Pathology of the Mucous Secretion in the Air-Passages*, Preliminary Communications by M. J. Rossbach and Th. Aschenbrandt, *Monatschrift für Ohrenheilkunde*, No. 7, 1881.

AURAL EXOSTOSES.—Cumberbatch reports two cases of aural exostosis. In speaking of the etiology of such tumours, he says, "They are most frequently situated in the posterior superior wall of the meatus, near the membrane, generally two in number." In all cases but two that he has seen the deafness associated with each case has been due to a concomitant disease of the middle ear, and generally catarrhal in character. The patients affected generally were of a gouty diathesis and middle-aged. In regard to treatment, he recommends that no operative interference with these growths be undertaken unless they cause retention of secretion. When complete obstruction exists, he thinks that the final closure is due more to the swollen condition of the skin of the meatus than to any increase in the size of the tumour; therefore, if the skin over the exostosis could be replaced by a thin cicatricial tissue, the swelling at each attack of catarrh would be prevented. In support of this theory he reports two cases. B. J., seen in September 1876. Before coming under observation, patient had an attack of purulent catarrh of both tympana with deafness. A polypus was removed from the left ear. After a short time he recovered from this attack. When examined, the following was the condition of both ears:—Right meatus much narrowed, about one-half; skin of meatus congested and swollen; membrane imperfectly seen, but no perforation detected. Left meatus, a single exostosis on posterior wall, skin also very vascular and swollen. On right side hearing normal, but, on left, when pressed only can the watch be heard. Patient also has naso-pharyngeal catarrh. Under suitable treatment the catarrh was benefited, and it was decided to apply nitric acid to the swollen skin covering the tumour. Ether was given, and every part of the tumour was touched with acid and then washed with a solution of soda. The next day the meatus was occluded by the inflammatory swelling. When the slough came away and the surface healed, the space between the exostosis and the anterior wall was much increased. Patient has been under observation for some time, but the cicatrix has prevented the occlusion, though the exostosis has not increased in size. In another case of exostosis the nitric acid was applied as before, and the space was also much increased in the meatus, and the patient much benefited by it.—*St Bartholomew's Hospital Reports*, vol. xvi. p. 267, 1880.

AURAL AFFECTIONS IN THE ACUTE EXANTHEMATA.—Attention is called to the rarity of observations by competent observers of the earlier stages of the ear diseases which occur during the exanthemata. From the statistics of Burckhardt-Merian it is seen that of all the cases of ear disease which were referred to the exanthemata, but 16 to 18 per cent. were seen within the first six months of their development; and Gottstein's own statistics are not any more favourable for the observation of the acute stages of disease, and for the determination of the question of how the great destruction which is so often seen in such cases occurs. Wreden of St Petersburg, from his connexion with the large children's hospital of that city, had most unusual opportunities for early observations. He has reported diphtheritic inflammation of the middle ear as very common in scarlet fever, but his observations have not been confirmed by others, as Gottstein thinks, owing to the ear disease being seen only in its later stages. According to Wreden, the diphtheritic exudation continues only for fourteen days, and is succeeded by suppuration, the stage in which the disease usually comes under treatment. As contributions to this subject, Gottstein narrates three cases—one of croupous inflammation of the velum, pharynx, nose, and both middle ears, in the second week of scarlet fever; one of diphtheria of the throat, with diphtheritic inflammation of the left tympanum, in the second week of measles; and one of acute desquamative inflammation of both tympanic membranes, with perforating tympanic inflammation, in the course of measles. In the first case, two days after the appearance of diphtheritic membranes in the pharynx and nose, great deafness was noticed, and examination showed diphtheritic membranes over both drumheads, which were already perforated, and the same exudation covered the tympanic mucous membrane. From the history, the presence of membrane first in the nose and later within the tympanum, Gottstein concludes that the exudative process extended up through the Eustachian tube to the tympanum and produced the destruction from within outward. In the second case, soon after the appearance of diphtheritic membranes on the uvula, palate, and tonsils, great deafness, without pain or discharge, was noticed in the left ear, and the deeper meatus was found to be covered by similar membrane. After removal of this, the membrana tympani was found perforated and the tympanic cavity in a state of suppuration, but without any membranous deposit, and Gottstein feels uncertain whether the exudation of the ear was an extension from the pharynx or was an independent deposit. In the third case the deposits in the ears were taken for diphtheritic membranes till the microscope showed that they were composed of epidermal cells, and not of a fibrinous exudation. In regard to the treatment of diphtheria, Gottstein has never seen the diphtheritic process shortened by cauterization, and considers that therapeutic efforts should be directed to removal of the exudation and to disinfection of the mucous membrane. He advises prolonged baths in aqua calcis and powdering the diseased surfaces, after removal of the membranes, with salicylic acid.—Gottstein, *Archiv für Ohrenheilkunde*, vol. xvi. p. 16.

THE ACTION OF CONSTANT ELECTRIC CURRENTS UPON CERTAIN AFFECTIONS OF THE INTERNAL EAR.—For a long time it has been thought that electricity could revive the auditory sense, which was, indeed, a natural view to take of the action of an excitant so powerful in other diseased states of the nervous system. It was therefore held that electricity could cure a deafness dependent simply on a weakness of the auditory nerve; but under the name of nervous deafness there was confounded a number of different pathological states. Whenever it was found that the various parts in the middle ear were healthy, the hypothesis of an affection in the labyrinth was used to explain a nervous deafness, though the affections of the labyrinth are admitted to vary with the conditions under which they are evoked. The application of electricity under these conditions, in a purely empirical manner, would give, of course, variable results. The great divergence of opinion in these cases is due to the fact that the observers have been more attentive to the mere fact of deafness than to the causes producing it. The author has asked himself, therefore, this question: May there not be, in a number of cases of deafness produced by very different causes, as, for example, hysteria, the administration of large doses of quinine and salicylate of soda, and after certain fevers, a similar pathological state characterized by disturbances of the vaso-motor nerves? This is a question, however, often propounded before by many observers, as the author must know, though there is no special evidence of such knowledge. This principle of observation being admitted, the author believes he can often connect diseases of the ear, both chronic and acute, with both temporary and organic disorders of digestion. Also, he has observed similar connexions between aural affections and vesicular eruptions, like herpes, which usually supervenes upon hepatic troubles, and a similar connexion between various congestive states due to diathesis or a neurosis, and also a connexion with uterine phenomena and aural disease. Therefore there are certain vaso-paralytic conditions which enable us to explain a certain number of morbid states of the ear which cannot be accounted for by the appearance of the drum nor of the chain of auditory bones. The application of electric currents in these conditions, by arousing the contractility of the vascular coats, breaks up this stasis of the blood and the passive congestion. Several illustrative cases are then given, and the method of application of the electric currents, as practised by the writer, are then detailed. The batteries which he has used are such as give out a constant current, and those made by Gaiffe are the most suitable. He has had made rheophores nipple-shaped in the centre, so that this prominence would fill the orifice of the auditory canal. These are first moistened and then placed one in each ear, and held in position by a double spring. The author considers that it is an essential in the electrization of the internal ear that the current of electricity should pass across the base of the skull. For, if one of the electrodes should be placed on the nucha while the other is in the auditory canal filled with water, there is no reason to suppose that the electric current passes through the labyrinth; but if it is made to pass through the base of the skull, the inner ear is acted upon in all its parts. The author admits that the electric current is direct in this instance without accuracy, and that it acts on all the portions of the petrous bones, so that thus the chorda tympani is irritated and brings about an increased flow of saliva, while at the same time the patient experiences a peculiar taste in his mouth. If, now, the current is suddenly and actively interrupted, the patient perceives a flash of light, which shows that the optic chiasm has been excited. The author has never met with any accident in thus applying the current, and by not prolonging the *séance* beyond five minutes the patient has not been exposed to vertigo or syncope. Should the latter threaten, the current must be stopped at once. No more than eighteen elements of Gaiffe's battery have been found necessary, and, in fact, the patient could not endure a more intense current. In general, twelve to fourteen elements will be enough. The employment of constant electric currents in cases of simple weakness of the acoustic nerves has always been attended with good results in the author's cases. This practice is one generally employed, and offers nothing new, as the author says; but he has felt it his duty to mention his experiences. He wishes to emphasize two conditions: 1. That there are morbid states of the ear which are characterized by a passive congestion of the labyrinth determined by a weakness of the vaso-motor nerve. 2. That constant electric currents, employed as he has shown, constitute a therapeutic means of great efficacy in modifying these pathological states, checking the tinnitus aurium and vertigo accompanying them, and in restoring the hearing.—Dr Ladreit de Lacharrière, *Annales des Maladies de l'Oreille et du Larynx, etc.*, September 1880.

PERISCOPE OF OPHTHALMOLOGY.

By George A. Berry, M.B.

An abstract of the first two papers of a volume published in commemoration of the twenty-fifth anniversary of Friederick Horner's professoriate in Zürich appeared in the October number of the Journal. The remaining contributions are:—

III. The Fovea Centralis in Man (by Wadsworth, Boston).—In this paper, measurements are given of the various dimensions of the fovea and the thickness of the retina in those situations. They differ slightly from those given by previous writers on the subject.

IV. On the Effect of Iridectomy in Hydrophthalmos (by Marc Dufour).—M. Dufour has operated in five cases of true buphthalmos, in all of which there was the usual increased tension, which, whether primary or secondary, is the condition of first importance as far as sight is concerned. His results, which, we believe, coincide very much with the experience of surgeons in this country, may be gathered from the following:—"Assurément le résultat final n'est pas brillant. Il se compose de deux résultats immédiatement bons. Mais l'un de ces deux se gâte au bout de quelques années, et l'autre m'est resté inconnu dans son état actuel. Deux autres sont restés dans le même état; le dernier est mort." He cannot, therefore, recommend the operation very strongly, but points out that three important symptoms are satisfactorily met by the treatment. 1. In all his cases the intraocular tension was permanently reduced, and did not again increase after the formation of the cicatrix. 2. Diminution in the size of the cornea appears likely to take place. This result was obtained in two of his cases. 3. The opacity in the cornea disappears. Notwithstanding these advantages, they are more than counterbalanced by the following dangers attending the operation:—1. The wound is long in healing. 2. Owing to atrophy of the zonule of Zinn, there is liable to be an escape of vitreous. 3. The sudden evacuation of a large quantity of aqueous humour is liable to be followed by hæmorrhage from the retinal vessels. 4. Subsequent detachment of the retina. M. Dufour's conclusions are important, and amply justified by the facts brought forward in his admirable paper. They are given in the following words:—"Ces inconvénients sont de nature à faire réfléchir avant de pratiquer l'iridectomie, cependant ils ne me paraissent pas de nature à l'interdire absolument. Je crois en particulier qu'arrivant dans une hydrophthalmie à l'état naissant elle serait suivie d'un résultat excellent." (These cases of progressive hydrophthalmus seem to us specially suited for the operation of sclerotomy, in which the size of the wound can be regulated by circumstances, and the same indication fulfilled without exposing the eye to the extra risk of removing a portion of the iris, which, owing to the stretched condition of the parts, is undoubtedly a serious one.)

V. THE APLANATISM OF THE CORNEA (by W. Schoen).—On the assumption that the cornea represents an aplanatic surface, Schoen proceeds to determine its character mathematically. He shows that, with its known index of refraction, the surface is not that of an ellipsoid of rotation, which, besides, is only aplanatic for parallel rays, and two surfaces of the fourth degree appear to him to make the nearest approach to the actual configuration of the cornea. The results arrived at are, however, extremely unsatisfactory, as he appears entirely to neglect the influence of the combination of the dioptric media in causing a diminution of spherical aberration—a combination which is, moreover, changeable.

VI. ANOPHTHALMOS IN AN INDIVIDUAL OF 27. POST-MORTEM EXAMINATION (by Otto Haab).—This case presented points of great interest to anatomists. There had evidently been an intrauterine destruction of both eyes. The orbits were of normal size and development, with the exception of the total absence of either optic foramen. All the ocular muscles were found to be of normal size and appearance. The globes—which measured, left, 3½ × 2½ mm., and right, 4½ × 4 mm.—contained remains of the sclerotic, choroid, retina, and vitreous alone. No trace of nerve-fibre was found in the optic nerves, which were represented by bands of connective tissue. This case afforded an opportunity of observing in man the same alterations in the central nervous system which were produced by Gudden in animals from which he removed the eyes at birth. A very full and excellent description of the changes observed is given; the two points of most importance being that there was undoubted atrophy of the two anterior corpora quadrigemina, whilst the posterior two were found normal, and that the corpus geniculatum externum was completely absent.

VII. THE MICROCOCCUS OF BLENORRHŒA NEONATORUM (by Otto Haab).—These organisms appear to be identical with those found in gonorrhœa, the characteristic appearance being that in these secretions the micrococci are almost entirely confined to the nuclei and protoplasm of the pus cells, and do not appear to any extent in the intervening fluid. They are sometimes single, but more frequently double (diplococci), two spherules lying together, separated by an extremely fine interval. This undoubted existence of germs justifies the use of strict antiseptic measures in the treatment of ophthalmia neonatorum.

A RARE FORM OF SYMMETRICAL TUMOUR OF THE EYELIDS.—Abadie has met with two cases of a remarkable form of growth in the upper eyelid. In both cases they appeared symmetrically in each eyelid. In the first, both were removed after they had been continuing to increase in size for eight and ten months respectively. On microscopic examination they were pronounced by two experienced histologists independently to be tubercular; but as no other tubercular symptom manifested itself during the three years the patient (a girl of sixteen when first seen) was under observation, Abadie believes it improbable that such could be their nature. Before proceeding to remove the tumours, the diagnosis arrived at was adenoma of the palpebral portion of the lachrymal gland. The removal was effected with difficulty, owing to firm attachments to the tarsus and prolongation up into the orbit. The tumour was of the size of a large hazel nut, and quite fibrocartilaginous in consistence. The other case, which presented itself only recently, was exactly similar in its clinical aspects, but the patient refused to undergo the proposed operation.—*Archives d'Ophthalmologie*, I. 5.

ON VARIATIONS IN REFRACTION PRODUCED BY THE EVACUATION OF THE AQUEOUS HUMOUR.—Tartuferi and Albertotti, working under the direction of Prof. Reymond of Turin, have found that on withdrawing the aqueous humour from the anterior chamber the refraction increases in eyes furnished with a crystalline lens, while it diminishes in aphakia. The change is proportional to the amount evacuated. The average amount of increase in non-aphakic eyes is 3·5 dioptres, being greatest in myopia. The diminution in aphakia is clearly due to flattening of the cornea, but the advance of the lens in other cases more than counteracts this, so that on the whole there is an increase. More accurate experiments would be necessary to determine how much the increase is due to this advance—more especially experiments with paralyzed accommodation. The time occupied in the return of the refraction to its original amount is taken as giving that of the refilling of the chamber. It averaged about 50 minutes.—*Annali di Ottalmologia*, X. 3.

SURGICAL PERISCOPE.

A CORRESPONDENT of the *Boston Medical and Surgical Journal*, in a recent number, gives his impressions regarding the International Medical Congress, in which, after recounting the general arrangements, the reception at the College of Physicians, and paying a graceful tribute to the eloquent and impressive address of the President, he details at greater length what transpired in the surgical section.

The three topics of greatest interest in the surgical section were, abdominal surgery, modern lithotrity,—they won't say "litholapaxy" over here,—and the treatment of wounds to secure union by first intention.

In regard to these questions it was evident that every delegate was anxious to ascertain the exact position of "Listerism." In reading and discussing papers previously in this section, the writer had noticed the presence of an influence hitherto limited in its application to certain art circles, for whenever an allusion to antiseptic surgery was made, "certain men, who shall be nameless, seemed to try to test the matter by initiating applause, to which, however, there was very little response."

Spencer Wells read a paper. He took strong Listerian ground and said that now he had given up drainage altogether, so great was his faith in antiseptic surgery. Others followed, especially Volkman, who, however, did not mention that he had discarded the spray at the time of operation. Marion Sims, while approving of antiseptics, advocated drainage, and reminded Spencer Wells of a case in which the patient *almost* died, when "nature opened the abdominal wound and discharged a large amount of fœtid fluid, when she immediately recovered." Dr Thomas Keith closed the discussion, and "never in the history of surgery did a few modest words make such a recoil in the 'currents of expectant thought' as his." Dr Keith, hitherto known as an ardent disciple of Lister, who had often quoted his successful results as illustrating more than any other surgeon the value of his method, surprised his audience greatly when he stated that for some months past he had entirely abandoned antiseptics, and relied now upon perfect cleanliness, care in controlling hæmorrhage, and thorough drainage, whereby his cases were giving him much less trouble and affording him more satisfactory results.

Dr Keith further remarked that he had 80 successive recoveries under Lister's method, and then 25 with 7 deaths—1 of acute septicæmia in spite of the most thorough antiseptic precautions, 3 of unquestionable carbolic acid poisoning, and 1 of renal hæmorrhage. But of the 80 successful cases many came too near dying, for a large number, on the evening following the operation, had temperatures of 105°, 106°, 107°; but, he said, "they happened to pull through."

Dr Keith fully realized the importance of his statement, and concluded his remarks in the following terse sentence, all the more convincing from the absence of all rhetorical effort. "Gentlemen, I have felt it my duty to make those statements, for *they are true.*"

As the principles of the antiseptic theory have never crystallized into a fixed form of doctrine, the members of the Congress were not much surprised to hear from Mr Lister, a day or two afterwards, when speaking on the subject of union by first intention, "that he had never admitted that abdominal surgery was the touchstone of Listerism, as the peritoneum healed so rapidly and possessed such remarkable powers of absorption that he doubted very much whether, in the hands of a skilful and careful operator, it was not better to dispense with the antiseptic plan." He had also recently discovered that blood and serum were poor soils for the development of germs without the addition of water, and that these remarkable facts at once led him to call in question the necessity of the spray, which he was prepared to abandon if irrigation or lavation should prove as good. As for carbolic acid, he said, "I am forced to admit its unfortunate character."

Not long ago, during the evolution of one of the phases of the antiseptic theory, it was declared by its founder to be of such preeminent value as to enable the surgeon to disregard all constitutional conditions; whereas now it would appear to be only an occasional useful adjunct to cleanliness, control of hæmorrhage, drainage, and rest, in the treatment of wounds.

Part Fourth.

MEDICAL NEWS.

Ophthalmology: Middlemore Fund Prize Essay.—The interest on the fund of £500 given in trust to the British Medical Association by Mr Richard Middlemore of Birmingham, to found a prize for the best essay on Ophthalmology, having accumulated for three years, the Committee of Council now offer, in accordance with the terms of the trust deed, a prize of £50 for the best essay on the Scientific and Practical Value of Improvements in Ophthalmological Medicine and Surgery made or published during the past three years. The successful essay will be the property of the Association. Essays must be in English or accompanied by an English translation, and forwarded under cover, with a sealed envelope bearing the motto of the essay and containing the name and address of the author, addressed to the General Secretary of the British Medical Association, 161a, Strand, London, and must be in his hands on or before May 31st, 1882.—*British Medical Journal.*

OBITUARY.

JOSEPH J. BROWN, M.B., F.R.C.P.E.

When a man is killed outright by accident in youth, health, and full work, his friends are startled as well as sorrowful; and when, in addition, the man was joyous, as well as able, successful in all that he put his hand unto, and with fair prospects before him, the event becomes a tragedy that makes a deep impression on his fellow-men. This was strikingly the case when, on the morning of the 29th September, the Edinburgh daily papers contained an account of Dr J. J. Brown's sudden death on the previous day by a gig accident at Cupar-Fife. The day before, those papers had contained an account of his annual report—an honest account of a year's work well done—that had given universal satisfaction, and was to have been followed by the reward of increased salary and honour; and that night, the night before his death, friends had come to his house to rejoice with him. No wonder that his death made a most unusual impression in professional circles in Edinburgh, and that most men thought or said, "In the midst of life we are in death."

Dr Brown was the son of a respected medical man at Wooler, one who, while spending his life in unostentatiously doing his work in a small country place, was an honoured and useful member of our profession. The son studied in Edinburgh, doing his work well, but withal sociable, and a great favourite. He took his M.B. with credit, and then had the great advantage of being a resident in the Royal Infirmary. After that he went as assistant to Dr Batty Tuke at Saughton Hall Asylum, and was taught by him to make beautiful sections of brain and cord, as well as to be an enthusiast in the study of nervous pathology. In a year he went to Morningside, and stayed there three years, all that time doing conscientiously the heavy medical and administrative work that falls to the lot of an assistant-physician there, working late at nights at microscopic work, writing good papers full of facts, and not neglecting the society of his many friends or the amusements of the patients. He was very fond of acting in private theatricals, and taking comic parts, and this he did capitally. At the end of that time he simply walked into the Fife Asylum when Dr Fraser was made a Deputy-Commissioner, the Board being, like sensible men, only too glad to get a man with such a training and such a reputation. He had been three years there when he came to his untimely end, keeping up and adding to the reputation that his predecessors had made for that institution.

His scientific work was of a very high order, and, alas! he had not worked up one-tenth part of the microscopic sections that he made of diseased brains and cords. We have never, either in this country, America, or the Continent, seen sections more beautifully made. There is at least one perfectly new and undescribed brain degeneration illustrated by them; and his collection of sections of diseased spinal cords from insane patients far exceeds anything of the kind in this country, so far as we are aware. Many new lesions are there shown. He was to have written his thesis for his M.D. on this subject. His papers on "Two Cases of Apoplexy of the Pons Varolii" and "The Pathology of Transient Alternating Hemiplegia," published in the

Journal of Mental Science for 1875 and 1877, are the records of most careful and original work. They are full of new facts which are scarcely done full justice to in the description. Indeed, Dr Brown sometimes found more difficulty in describing a new pathological lesion than in discovering it.

Dr Brown's personality and character were very marked—a man whose breadth of chest and shoulder made him look short, with an expressive face, and a twinkling eye that laughed long before his features moved, a most social disposition, a cheery manner, in which kindness was very manifest, but which often took the form of lively badinage, and animal spirits that at times boiled over—in short, a healthy nature. *Requiescat in pace.*

THE LATE MR A. B. STIRLING,

Sub-Curator of the Anatomical Museum in the University of Edinburgh.

By D. J. Cunningham, M.D., Edinburgh University.

It is with deep regret that we record the loss which science has sustained by the death of Mr A. B. Stirling. It is only at long intervals that such a man appears—a man born in the humbler ranks, beginning life amongst surroundings altogether uncongenial to the pursuit of science, and yet, by his native talent and indomitable energy, rising above these in such a manner as to make his name known to almost every biologist in this country. Mr Stirling was born in Milngavie in 1811. His father was a shoemaker, and in many respects a very remarkable man. He was known in the district as a great conversationalist, a keen radical, and a powerful lecturer on temperance. His force of character was such that he exercised a very considerable influence on his townsmen in a similar grade of life. As an instance of his keenness in political matters, we may mention that he used the radical flag as bed-curtains. Mr Stirling, therefore, was issued into the world in a bed draped in this manner—under the radical flag. He inherited his father's ability and vigour of temperament, but in a different direction. He was a born naturalist. As a school-boy he made skeletons, stuffed birds, collected their eggs, observed the habits of animals, and even made his first attempts at injection. His efforts as an injector were made with an ordinary pewter syringe, and the fluid he used was thin flour paste coloured with brick-dust. It is interesting to note that in after life, when called upon to assist Professor Pettigrew in the injection of the coronary arteries of the heart, he used the same fluid with a different colouring matter. These injections are known to every one who visits the Edinburgh Anatomical Museum.

Mr Stirling's experience of life was a very varied one before he finally settled down to anatomical work. For several years he plied his father's trade. He afterwards successively became a gamekeeper, a water-bailiff, and a policeman. In the latter capacity he was promoted to be an inspector in the St Andrews district. He used to tell how even on one occasion he was engaged to sail as a "doctor" on board a whaling vessel, his chief recommendation for this berth being that he was an unerring shot. Circumstances occurred, however, which prevented him fulfilling this engagement.

In all his different pursuits Mr Stirling never lost his love for natural objects, and the result was that he made a fine collection of skeletons, stuffed birds, etc., etc. By this he attracted the attention of Professor John Reid and Dr Adamson of St Andrews. Recognising his merits as a naturalist, they employed him to arrange the St Andrews University museum. This work he carried out so successfully that he was recommended by Dr Adamson to the late Professor Goodsir, who appointed him, in 1856, sub-curator of the anatomical museum of the Edinburgh University. He was thus above forty years of age before he was able to give his undivided attention to the pursuits towards which he showed such a leaning. In a remarkably short space of time he acquired a good knowledge of human and comparative anatomy; he became a dexterous and accomplished microscopist, and began to add many new and beautiful specimens to the museum. In less than five years he had invented his microtome —an instrument now in such general use by microscopists that the wonder is how microscopy could be pursued with success without it. Certain it is that classes of practical histology such as are conducted by Professor Rutherford and Professor Greenfield in this University could hardly be conducted without this instrument, except at the expense of a great amount of skilled labour. In 1861 Professor Goodsir was investigating the minute anatomy and relations of the *septum lucidum* of the brain, and requested Mr Stirling to supply him with sections. The delicate nature of this structure baffled all Mr Stirling's manual dexterity, and he accordingly set himself to devise an instrument by which it could be cut. The section-cutter was the result. Several modifications of this microtome have appeared,—thus Professor Rutherford adapted it for cutting frozen sections,—but the principle has been retained throughout. It is true that other microtomes have been devised upon a different principle, but none have superseded, or, indeed, are likely to supersede, Mr Stirling's.

Shortly after Mr Stirling's introduction to anatomical work he turned his attention to the better preservation of the subjects used in the dissecting-rooms. After numerous experiments he hit upon his well-known preservative fluid. The incalculable boon that this has been to students of anatomy can hardly be estimated. Such an accident as a dissection-wound is now almost unknown in the Edinburgh dissecting-rooms. This fluid not only preserves, but

tain extent it redeems, a bad body.

Mr Stirling did not write much. He had a great dislike to "appearing in print," and had usually to be urged into it by his friends. A great amount of useful knowledge has consequently died with him. What he did write always received marked attention. We would advise all our readers to peruse a little article which he published in the *Journal of Anatomy and Physiology* (vol. xiii.), upon the habits of two fishes—one an electric fish (*Malapterurus electricus*)—which he kept alive in a tank for nearly a year. The story is told in a quaint style which is very attractive. His *Researches into the Fungoid Disease of Salmon* constitute a piece of work of very great value. His knowledge of the structure and habits of fish led him to take a keen interest in the disease. From all affected rivers fish were sent to him for examination, and he published a series of papers in the *Proceedings of the Royal Society of Edinburgh* on the subject. The importance of these papers is already recognised; indeed, they give the fullest and most exact information on the subject of any that have yet appeared. He strongly protested against the theories that the disease arose from pollution of rivers, overcrowding, absence of frost, diseased kelts, and addled ova. His opinion may be given briefly in his own words. He says everything tends "to confirm the opinion . . . that saprolegnia (*i.e.*, the fungus) is present in all fresh water, and only requires the presence of fish in these waters, together with an at present unknown climatic or other influence, to become epidemic. . . . I would recommend the employment of a special squad to search for and take out of the water all diseased or dead fish."

In the museum in which it was his delight to work Mr Stirling has left a mark which will never be effaced. His beautiful specimens are the best monument to his memory that could be erected. As an injector he was unsurpassed. He possessed that delicacy of touch, that intimate relationship and close communion between hand and mind, which is the distinguishing feature of all great *preparateurs*. Of his numerous fine injections perhaps the finest are the series of placentæ of different animals which were added to the museum at the time when Professor Turner gave in London his lectures upon this organ.

Many generations of students knew Mr Stirling, and all who came in contact with him respected him. The ready sympathy which he extended to every one endeared him to all. It will be long before his genial, kindly manner is forgotten. The older generation of students will always associate him with Professor Goodsir. The striking picture of him guiding the tottering steps of his great master into the anatomical theatre or around the dissecting-rooms is not likely to be erased from their memories. The younger generation of students will associate him with Professor Turner, and they will remember the mutual regard which was evinced the one for the other.

The high esteem in which he was held was very forcibly shown a few years ago, when a testimonial was presented to him in the shape of a microscope, and a purse containing five hundred guineas. On more than one occasion Mr Stirling was urged to give the facts necessary for the drawing up a sketch of his life, but he shrank from the publicity of such a step.

Mr Stirling died at Thankerton, in Lanarkshire. He had gone there, in the full enjoyment of health, to spend his holidays near the banks of the Clyde, his favourite fishing resort. He was struck down with cerebral apoplexy very suddenly, and without a single premonitory symptom. After lingering in a semi-conscious state for a few weeks, he gradually succumbed.

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Opening Address to the Students attending the Edinburgh School of Medicine, delivered 24th October* 1881. By A. G. MILLER, M.D., F.R.C.S.E., Lecturer on Surgery, and Senior Assistant Surgeon, Royal Infirmary.

GENTLEMEN,—I have been deputed by my fellow-lecturers to welcome you to-day to these benches at the commencement of the session. This I would seek to do most heartily. We welcome those who have been here before, and with whom we are already acquainted, to the sphere of their previous studies ; and I trust that this session will be, if possible, a better, happier, and more successful one than the former. To those who are here for the first time—and I hope there are many such—we offer a most cordial welcome ; and I hope that their experience of this school will be that it is not behind any other in those good qualities which attract and satisfy students.

Gentlemen, having thus fulfilled the purpose for which I am deputed, I might sit down contented—and I daresay both you and I would not be disappointed were I to do so at once. But it has been a custom here to deliver an address on such occasions as this, more or less interesting, amusing, and intelligible. To me this custom has no attractions, and I would fain avoid it at present. I have proposed more than once to do away with the practice, but have invariably been outvoted. I have been told I must take my turn of the honour and duty. That it is both I admit ; but I consider that both the students and the lecturers might do something better with their time. In the present day there is little enough time in which to deliver a hundred lectures or to get up a subject ; and the proof of what I say is evident from the remarkable time at which the session is made to commence this year. You see, gentlemen, I am no stickler for old customs when they are inconvenient. Bowing, however, to custom for the present, and having respect to the wishes of my colleagues, I have made up my mind to trouble you with an address on this occasion. I have felt it necessary to do this all the more because my previous opposition to introductory addresses was put down by some to fear of the time when my own turn was to come. I admit that such was the case. But I am all the more anxious on that account that I should do my duty now, and have another try afterwards whether I cannot save some one else from the infliction—and the *honour.*

Now, gentlemen, having said thus much, what more must I say? All the apparently possible subjects suitable for introductory addresses to students have been spoken upon and written upon over and over again. The medical journals this year, like other years, are teeming with such addresses. I have just read a most excellent one in the *Edinburgh Medical Journal;* and really there is nothing left to be said on these more appropriate subjects. You must pardon me, therefore, if I chalk out a new line for myself, and speak to you to-day in a style you are not accustomed to hear from this place.

I cannot stand here to-day and look upon so many young faces without very mingled feelings. There is doubtless a future not only of promise, but of usefulness, prosperity, and happiness before many of you; but I know from sad experience that this cannot be said of all. Some who started with me in the race are now no more—some cut off in the midst of bright promise—some, alas! in the midst of shame and folly. As it has been with the previous generations, so will it be with the present and future. But who is to say which out of all of you will be successful, and which fail? Who can tell what is before any man? Some of the most promising have failed; some of the most successful have broken down. Is it not well known that some have succeeded to honour and station who seemed very unlikely at one time to get them, and some have made shipwreck who promised to carry all before them? Is this not so? And yet these are exceptions to the rule. The men who early overcome difficulties are those who succeed ultimately; and the men who aim low to begin with are those who miss the mark in the long run. With such thoughts as these in my mind, it has occurred to me that I might spend our few minutes together not unprofitably to you, by directing your attention to some of the dangers that lie before you, that are even now present, and that have often (too often) caused the ruin of those who have preceded you.

Ours is a noble profession, gentlemen. The great and noble among earth's sons have practised it; and He, the greatest and noblest of all, the Son of man, was a healer of the sick. And yet this noble profession is beset with many temptations from the beginning to the end; and, sad to say, many have fallen under these. I could myself enumerate many. I shall not refer particularly to the temptations to selfishness and greed, or to pride and arrogance, and such like. There are some who have come far short of the glory of their profession by caring, not for their patients, but for their fees; others who have equally missed their reward by supposing themselves the masters, instead of the servants, of suffering humanity. There are many other ways in which we may fail in attaining the highest ideal of our Christ-like profession, but of these I would not speak at present.

There is one evil which has often struck down the student and the practitioner, and which has impressed itself on my mind as one of the worst temptations which beset the path of those, especially, who are entering the profession. I mean intemperance. Now, there are many ways in which intemperance manages to ruin men, and it often appears as an angel of light—for instance, in the matter of hospitality. I once took charge of a practice in the country for a friend to let him get a holiday. I was tolerably well known in the district, and consequently was received in a manner considered most hospitable. But I assure you, had I partaken of the half of what was offered to me in the way of drink, I should never have reached home of myself. Of course I was quite safe, being a teetotaler; but I gave great offence to several kindly-intentioned people, for total abstinence was not so well understood fifteen or sixteen years ago as now. Those of you, therefore, who are total abstainers will not find it so difficult now to persuade your patients that you can live and work without whisky as those before you did. The social customs of the people are truly a difficulty in the way of the medical practitioner, especially when he is beginning. But they are more; they are a great danger. I wish I could impress you all with this, and I wish I could persuade people that when they complain of their doctors "taking to drink," they have generally themselves to blame. I have not unfrequently heard of some district where the doctors, one after another, have broken down through drink. About such a district I have felt sure of two things, at any rate—first, that the people are fond of treating their medical attendants; and second, that none but a teetotaler had a good chance of getting on there.

Another great temptation to a doctor is the hard work, exposure, fatigue, and especially the night work, which he has to go through. Under such circumstances one is apt to suppose that it is impossible to get on without stimulants. Now, I don't mean to attempt to give you a dissertation on the science of the question, but I can safely say this, that it is now well known, from the experience of many, that hard work can be done without stimulation, and done better. What I wish mainly to impress you with at present is, that there is a danger ahead, a danger from intemperance, a danger in regard to which no man can say that he will never be exposed to it, and against which, therefore, we ought all to protect ourselves as thoroughly as we can. Perhaps you ask, why am I trying to warn you against dangers a long way ahead? I answer, that some of you are just concluding your studies, just about entering on the practice of your profession, and therefore just about to be exposed to these very dangers. But I answ also, that even to those of you who are entering on your stud the danger (and it is a real one) must not be looked upon as something in the far distance which cannot reach down to you a present, for, as we have seen, the future is oftenest seen in t present, and as is the student so generally is the practition The rule is not so inflexible but that the best may fall or t worst recover himself, but it is mostly certain that the stude life forecasts the after life. The practical deduction I wo make from this is, that now is the time to prepare for the dang now is the time to be independent of thoughtless though w meant hospitality, now is the time to be independent of stimulation, except those natural stimulants to work which the desire t acquire information and to get on in one's profession affo Scientific men who have studied the subject tell us that stimulants ought never to be required by the young and healthy, th they are peculiarly inappropriate for brain-workers, and that whe taken it is always at a cost the price of which must be paid soone or later. Unfortunately, the postponement of the penalty ofte encourages the indulger to go on till the day of reckoning com as a surprise, and the penalty is a heavy one. Men of observation tell us—and you may, I am sorry to say, see it for yourselve any day—that in the case of many medical men the so-called us of stimulants leads to the abuse, and, before long, to the ruin o practice, character, body, and soul. Having sounded my note o warning, I must add my advice in the matter of prevention.

You are doubtless prepared to hear that I recommend you t become total abstainers. I must, however, give you reasons. I the first place, it is quite evident that as long as a man is a tota abstainer from alcoholic stimulants he is in no danger from them. Secondly, the teetotaler is in no danger from the would-be hospitality of his patients. When asked first he has his answer ready and he is not likely to be bothered again. He is also safe from the temptation to refresh himself either after or before fatigue. When a man is an abstainer, and feels that alcoholics must not enter into his calculations, it is wonderful how little he thinks of them or cares for them. For myself, I never know what it is to wish for a glass of wine or beer, or anything stronger than tea or coffee. But I know well how to enjoy a drink of cold water. I know well what a refresher it is.

With regard to the possible help to be got from stimulants towards doing hard work, I may quote Dr Andrew Clark, who looks upon the idea as a delusion. He calls alcohol not a helper, but a hinderer to work, and says that if a man is wise, the more busy he gets the less stimulant he takes. The apparent refreshing action of alcohol taken after fatigue is attributed by some to a paralyzing action on sensation. In other words, the man is quite as tired as ever, but he does not feel it. If, therefore, under such deceitful nfluence he should attempt more work, he is running into great danger of a break-down altogether. The total abstainer, on the other hand, feels exactly as he is, and therefore knows what he is fit for; and, as has been abundantly proved by experience as well as experiment, he is actually more capable of work than the other. I shall not trouble you with further enumeration of advantages or disadvantages, but shall simply ask you for your own sakes to study the subject in all its aspects. And above all things, I advise you to give a trial to abstinence. It can do you no harm. No one ever got harm by it; and if you give it a fair trial, I am sure you will like it, and will find it a blessing in the long run.

And now, gentlemen, I must ask your attention for a few minutes longer to another subject. I have spoken of the noble and Christ-like character of our profession. And if you look at it apart from the idea of its being a means of living, it is essentially after the example of Him who went about doing good and healing the sick. The highest grade, therefore, in medical practice must be that which comes nearest to the Master and Lord. In a word, what I would say is this, that, in my opinion, the practice of our profession without regard to fee or reward, but out of pure interest in and love for those attended to, is the highest and most honourable position that can be aimed at, because the nearest to the divine example. And this ideal we have fulfilled in the medical missionary.

Let me now ask your attention for a short time to medical missions. And I do this avowedly in the hope that some of you may be induced to devote yourselves to this highest consecration of our profession.

Gentlemen, there are many things to recommend medical missions to you as your object in life. There is no line of practice in which you are likely to meet with a greater or more extensive variety of cases. In foreign lands, far from possibilities of consultations, and out of the way of specialists, with no one to compete with, a great variety of severe and important cases necessarily come under observation. Had I time, I could tell you of valuable work done by medical missionaries—from David Livingstone downwards—and much information given to the profession from their extensive practical experience. And, again, the superstitious reverence with which medical men are regarded among heathen people gives them a position and an influence among these nations that no one else could possibly have.

But it is not for this that I would ask any one to turn his attention towards medical missions. The practice of medicine and surgery, though an important object, is only a secondary one to the medical missionary. The primary object must ever be the carrying of the gospel into the dark corners of the earth. The Edinburgh Medical Missionary Society undertakes the training of medical missionaries; and a great number of most noble and useful men have passed through their hands. As one of the directors of this society, I wish to lay before you their claims for your consideration and support, even though you may not decide to devote yourselves to the work which they promote.

In training young men for the field of labour as medical missionaries, we require, first, that they should be devoted Christians, knowing their Master, conscious of His having called them, and thoroughly willing to follow Him wherever He may lead. Secondly, they must be above the allurements of money and fame. They must be willing to renounce all private practice and personal advancement, in order that they may devote themselves wholly to their special work. Thirdly, they must be thoroughly qualified practitioners. And we are equally anxious about each of these points. If a man be not thoroughly devoted to his work for the work's sake and for Christ's sake, he may turn back; if he is not above caring for pecuniary profit, he may turn aside to private practice; if he is not thoroughly qualified for his work, he may bring discredit on himself and on medical missions. You see, then, they are no ordinary men whom we require for our agents. Certainly no ordinary everyday person would do; it requires an extraordinary man to fulfil our ideal. But if any of you should ever think of devoting himself to medical mission work, let him not be held back or discouraged by the high requirements which I have enumerated. If he has the desire to consecrate his life to the service of Him who died for him, the same Spirit who has put it into his heart to devote himself to such work will fit him for it.

But let me say a word on the second qualification to which I have referred. I daresay it has struck you, as it has often struck me, that it seems very hard that a man who is capable of making a comfortable income for himself—perhaps even a fortune—by his talents and professional requirements should be obliged to content himself with a very limited income, and also to renounce all other sources of income beyond his salary. It is hard, and it isn't. From the medical missionary's point of view it ought not to be hard. He goes into the work, not for the pay, but for the work, not for the remuneration, but to do good and to serve Christ. He is to be as his Lord and Master. The servant is to be as his Lord. But the state of matters is an unfair one from your point of view and mine. That is to say, things are not as they ought to be, as far as you and I are concerned. Why are missionaries poorly paid? It is because we who stay at home don't do our duty in supporting them. Missionaries, I grant, do not grumble. I never heard of them grumbling. And it is greatly to their credit. But it is a lasting disgrace to you and me that these noble men and earnest workers are many of them so poorly paid. They are doing work for us; for it is the duty of all Christians to spread the gospel. They are therefore our deputies, and we should recognise them and assist them as such.

Edinburgh is the birthplace of medical missions in this country, and it is now exactly forty years since our society was first formed. The first founders and directors were the most eminent medical men of their day—Dr Abercromby, Sir James Simpson, Dr Coldstream, Professor Miller, and one who has lately passed from among us, and who was a very familiar object in this classroom—Dr Handyside. Dr Handyside might be called the originator of medical missionary work in this city. He it was who procured 39 Cowgate—now the Livingstone Memorial—rescuing it from being a centre of evil as a public-house, and making it a centre of good as the Medical Missionary Dispensary. The society began work with a few pounds a year only at its command. Now its income is above £3000. The work done by the society is mainly centred in Edinburgh. In the Cowgate upwards of 10,000 cases are attended to annually. Of these upwards of 3000 are visited at their homes, between 300 and 400 cases being obstetric.

The object of the dispensary is mainly twofold—to benefit the patients applying, and to afford special training and experience to the students who are devoting themselves to medical mission work. The student's training, also, is mainly twofold—practical work in visiting and dispensing, and also practical experience in dealing with the spiritual as well as bodily necessities of the poor patients. The vast numbers of patients attending the Cowgate Dispensary gives excellent opportunity to the students of acquiring experience in all kinds of cases and in dispensing. (I may here mention that any student may take the dispensary practice, which qualifies for the boards.) I think that, as a rule, dispensaries (unless, perhaps, provident ones) do harm in the way of pauperizing those attending them. In this respect, however, the Cowgate Dispensary is innocent, for from my experience of the class of persons attending there I should say it would be impossible to make them more degraded than they are, at least by the mere tendering of charity. I cannot at present enter further into the objects and labours of our society.

I shall merely repeat that I have made this reference to medical missions in the hope that some one may be led to devote himself to this most noble branch of our noble profession. Before I sit down, I have the great satisfaction of announcing that we have received most valuable additions to our staff of lecturers this session—Dr Cathcart, who succeeds Dr Handyside as Lecturer on Anatomy; Dr D. J. Hamilton, who lectures on General Pathology; Dr George A. Gibson, Lecturer on Medical Anatomy and Diagnosis; Dr John Robertson, Lecturer on Diseases of the Eye.

ARTICLE II.—*On Pityriasis Rosea (Gibert); Pityriasis Macula et Circinata (Bazin).* Based on a Paper read before the Berl Medical Society by Dr GUSTAV BEHREND, Berlin. Specially translated and condensed for this Journal, from the *Berl Klinische Wochenschrift,* No. 38, 1881, by W. ALLAN JAMIES M.D., F.R.C.P.

THE patient whom I show you exhibits an affection of the skin which has not, as a special form of disease, been hitherto described in German literature, while in foreign writings so little reference has been made to it that one is led to the conclusion that it must be extremely rare. Yet, both last year and previously, I have several times had occasion to see it, and believe that other observers must have also met with it even more frequently, but have confounded it with other skin diseases which resemble it in outward characters, especially with herpes tonsurans.

1. The patient, 22 years old, in other respects a healthy girl, came under my care on 9th March. Eight days before, she had observed an extremely itchy red patch beneath the right clavicle, which she often scratched. In two days the spot became pale in the centre, assuming a ring-like form. At the same time it increased rapidly in diameter, and then, after a duration of about a week, disappeared, leaving in its place brownish pigmentation. A few days after the appearance of the first patch, a great number of similar ones, which likewise itched, manifested themselves on various parts of the body. These came out simultaneously, and were apparently unaccompanied by fever.

When I first examined her, on the 9th March, I found on the neck, trunk, and extremities many well-defined rose-red patches, round or elongated, and from a millet-seed to a bean in size. These were distinctly prominent, and covered with fine grayish-white and tolerably firmly adherent epidermic scales, which gave the impression of powdering with flour, and communicated a feeling of roughness to the finger passed over them. The eruption was most copious on the neck, which it surrounded like a broad cravat. It was also plentiful on the posterior aspect of the thighs. There it had a more uniformly dusky hue, and, from the friction of the clothes, was free from scales. Less abundant on the supra-clavicular and pectoral regions and on the shoulders, on the rest of trunk and extremities it was disseminated, while the face, hands, feet, and scalp were free. Several tolerably large patches occurred in the axillæ. Repeated microscopic examination of the scales revealed no fungi.

The treatment consisted in painting the patches night and morning with 1 in 20 solution of corrosive sublimate in spirit and glycerine. For comparison the spots on the chest and shoulders were untouched. On the 16th March many of the patches which had been treated had faded; others had become much paler. On he untreated parts, too, a diminution in the intensity of the colour, hough not to the same extent, had taken place. At the same time nearly all the patches had grown larger. Some, from central involuion, were now annular.

In order to complete the picture, I may be permitted to recount everal cases previously met with, which, while in primary characers identical with the above, yet in many points amplify and modify the clinical representation.

2. On 4th August 1877 a girl, 8 years old, became slightly everish. This subsided in twenty-four hours with the eruption of numerous spots on neck, trunk, and extremities. The patches, which were partly of a bright red, partly of a reddish-brown colour, were at first on a level with the skin, but next day rose above it and became covered with fine grayish-white flour-like epidermic scales. These adhered pretty firmly to the surface, but could be scraped off with the nail without leaving a bleeding spot behind. As I had never before seen a similar case, I did not offer a diagnosis. The absence of catarrhal symptoms, and the fact that the face was not involved, excluded measles, and there was no reason to suspect syphilis.

In course of two days some of the spots on the trunk began to grow paler, while many, from a process of involution in their centres, were transformed into rings. Inunction with an alcoholic solution of soft soap was prescribed, and under its use still further involution took place. Peripheral extension of the patches was not noticed; and when the primary fever had disappeared, the general health was unaffected.

3. S. J., journeyman furrier, 18, consulted me on 20th April 1880. A few days before, he was attacked by an eruption of red spots. He regarded this as measles, since all his master's children were down with it. The eruption did not itch, appeared without feverish symptoms, and was observed by accident. The general health was in all points natural. I found, on examination, a great number of pretty thickly set pale red patches, less than and of the size of peas. These were scarcely prominent, and were only partially covered with a very few fine epidermic scales. They were most numerous on the neck and trunk, but few on the flexor aspect of the arm, and absent on all other parts of the body. The rash was proved by exclusion to be neither measles, a macular syphilide, nor a medicinal. Already, by next day, several patches, as those on the abdomen, began to fade in the centre and become annular. In their further course they extended but slightly. Under frictions with soft soap the exanthem gradually grew fainter, and he was dismissed cured on 12th May. Total duration, about three weeks.

4. Mrs B., 32, noticed red patches on her neck in the beginning of August 1880, which caused no disturbance of the general health, but itched pretty severely. I found rose-red elevated

patches, from a pea to a bean in size, and bearing fine scales. These were specially numerous on the supra-clavicular region and on the nape of the neck, near the hair. There was at the same time on the left side of the neck, about the middle of the sterno-cleido-mastoid a small pale red circle, with irregular margin, and somewhat prominent above the surface. It enclosed normal but pigmented skin. A small and perfect ring was seen lower down on the same side of the neck. Friction with an alcoholic solution of soft soap was ordered.

A few days after, the patient noticed that patches in every respect the same had appeared over the body. She was certain that these had come out later than those on the neck. The upper portion of the skin of the back, between the shoulder-blades, was beset with pale red spots, which could only by oblique light be determined to be prominent above the surface. There were more numerous, better defined, and larger ones in front, under the collar-bones, over the deltoid, and at the lower border of the pectoral muscle. They were scattered over the abdomen, in the axilla and popliteal spaces, and on the flexor surfaces of the extremities. Where the bands of the clothes and garters pressed, and under the mammæ, they occurred more thickly. On the parts above the waist, which were daily washed with soap, most of the patches were smooth and bore few scales. The scales had also disappeared on those parts where the clothes pressed and under the mammæ. On the neck and upper part of the chest the eruption was remarkably symmetrical. On other regions this was less evident. No fungi could be discovered.

After four days' use of the spiritus saponatus kalinus the skin became shining, tense, and painful. The epidermis separated soon after on the treated parts in large flakes. Nevertheless the spots reappeared in two or three days, and again were covered with the floury scales. Individual patches had entirely vanished. The recurrent ones were paler than previously, here and there grew larger, and tended on several parts to be transformed into rings. The patient objecting to the continued use of the soap, a two per cent. alcoholic solution of corrosive sublimate was substituted for it, and in a fortnight the patches were quite gone.

5. Paul F., 7 years old, was brought to me by his mother on 24th March. She had for about fourteen days noticed red spots on his back, which itched somewhat and induced scratching. As far as could be made out, there was never any disturbance of health. I found patches of the same description as those in Case 1. They were most numerous on the back and shoulders, more sparingly on the chest and abdomen. Those on the posterior aspect of the body were larger than those on the anterior. On the left shoulder was an elongated red ring with a duskily pigmented centre. On the 28th March this ring had faded, and there was now but a faint stripe of pigment visible. New rings, however, were now present on various parts of the back, some of which showed irregular ex-

pansions. By the 3rd April the earlier rings had disappeared, likewise some of the patches before they had experienced a transformation into circles; others had become considerably paler, and were now a pale reddish yellow. New outbreaks, however, in considerable numbers had appeared on regions which eight days before were tolerably unaffected. Thus delicate light red rings were seen on the neck, shoulders, and beneath the clavicles, which here and there came in contact, forming gyrate lines; further, bright red spots the size of linseed, bearing fine scales, had formed between those which had become pale. The itching which had been present at first had now quite gone.

On the 8th April the rings on the neck had quite vanished, part of the eruption on the trunk had grown paler, and was now either yellowish or greenish red, or very delicate bright red. Other patches were now replaced by pigmentation. No new spots had come out. Epidermic scales which had been scraped off were examined repeatedly for fungi, but none were found, and this was confirmed by Dr Jurgens. Treatment was purely expectant, and consisted in the prescription of a simple decoction.

If we now gather the symptoms together which were presented by these five cases recorded above, we have to deal with a new parasitic skin disease characterized by the appearance of patches varying in size from that of a pin's head to a pea or bean, round or longish, and of a rose-red colour. These project a little above the surface, are covered with powdery yet firmly adhering epidermic scales, and are accompanied with somewhat severe itching on first coming out and during the earlier period of their continuance. As a rule, the eruption shows itself primarily on the neck, but extends in a short time over wide areas of the body, and increases by successive outbreaks. Usually neither fever nor any disturbance of the general health is a concomitant; only exceptionally feverish symptoms of a slight nature usher it in. The spots are set thickest on the neck, the supra- and infra-clavicular regions, and on the shoulders, more sparingly on the remaining portions of the trunk and extremities, while the face, the scalp, as well as the skin of the hands and feet, continue invariably free. Still there are instances in which the eruption extends uniformly over the body, avoiding, however, even then the last-named situations.

In a short time, commonly even after two or three days, processes of involution show themselves on the patches in two directions, which lend a peculiar expression to the general features of the disease. Either the spots grow paler uniformly over their whole extent, take on a bright yellow tint, become level with the surface, and disappear, while the minute scales which are found on them fall off, a slight degree of pigmentation being left behind; or, the involution of the eruption commencing in the centre of each patch and advancing to the circumference, rings and crescents are formed which enclose a feebly pigmented, otherwise normal, portion of skin, the peripheral extension going on for a certain time, to end in spontaneous disappearance, as in the first mode. On such spots the subsequent pale pigment mark is found to be surrounded by a somewhat darker-coloured wall, so that one is often able to decide whether a patch or an enlarging circle had been present on a fixed spot. When in their centrifugal increase several circles encroach on one another peculiarly irregular lines and map-like designs are produced, just as are seen in other skin diseases, as psoriasis, erythema multiforme and some forms of syphilis. The features which this disease exhibits, not merely in different individuals, but also in the same person, are very variable, and one almost always encounters, in addition to recent spots, patches in all stages and forms of evolution and involution.

In cases like those related, before I instituted a microscopical examination of the epidermic scales I always believed I had to deal with examples of that form of tinea tonsurans described by Hebra and his followers as acute tinea tonsurans maculosa. It is now not improbable that in most if not in all these I had before me dermatomycoses, if not tinea tonsurans. Many facts are thus made clear which were inexplicable to me so long as I regarded the form of disease described above as induced by the trichophyton tonsurans. For example, while the trunk was extensively affected, the face, the scalp, and the back of the hand was always untouched by the disease; and this although the hair forms the most favourable soil for the growth of fungi, and, as Bazin has pointed out, the back of the hand, owing to external causes, becomes very soon affected. This contrast was particularly remarked by me in Case 4, in which the eruption was present in the axillæ and on the back of the neck close to the hair, while I could not discover a single diseased hair. But, apart from this, there were two points in which this disease exhibited a marked difference from tinea tonsurans—first, the spontaneous involution which it underwent in course of a certain time, as compared with the latter, and its slight communicability to others who happened to be long and closely associated with those who suffered from it. I recall to mind the rapid and extensive diffusion of the trichophyton tonsurans in those countries, such as England and France, where it is more frequently met with than here, so that a schoolboy affected with it can in the very shortest time communicate it to a great number of his companions. The boy F., Case 5, on the contrary, lived with his family in a small room, was continually in close contact with his sisters, nay, slept during the entire course of the disease in the same bed with his father, yet it was impossible to discover the smallest trace of the disease either on his father or any other member of the family.

Although it was quite impossible for me to discover fungus elements in the scales which I removed, yet I cannot deny that in some respects this affection conveys the impression of a parasitic

disease. While, on the one hand, its constant extension from the upper parts of the body to the inferior ones suggests the thought of the presence of seeds, the peripheral enlargement of the patches and circles reminds one, on the other, of the dermatomycoses, so that there is no absolute correspondence between the results of my microscopic examinations and the clinical features. I cannot, therefore, regard my investigations as conclusive, and believe that more are needed to remove the contradictions. Should fungi be found to be present, we have here a new form of parasitic disease of the skin; *but it appears to me even now to be quite certain that the disease under discussion cannot be identified with tinea tonsurans, that, moreover, we have in it an independent and well-characterized form of skin disease,* which, so far as I can form a judgment, is not very rare.

In these circumstances it must be regarded as strange that hitherto very few foreign dermatologists have described it. Gibert was the first to give an account of it as a peculiar disease under the name of pityriasis rosea, separating it from pityriasis rubra, a dermatitis accompanied by flake-like desquamation of the epidermis. A few years later Bazin treated of it as arthritide pseudo-exanthematique squameuse under the name pityriasis rubra acuta maculata et circinata, and Hardy as pityriasis circinè. Among later authors, Horand, Metton, and Nicolas have paid fuller attention to it, and recently Duhring of Philadelphia, who has in essential points modified and extended the views of the French physicians. Diday and Doyon have devoted some lines to its description, while Rendu has contributed the account of a suggestive case. I cannot, however, agree with Duhring that this disease has entirely escaped the notice of earlier physicians. The somewhat defective description given by Willan of his roseola annulata, which he, however, essentially amplified in the accompanying plate, No. xxvii., appears to me to correspond more closely to the disease we are considering than to any other. One needs merely to compare the picture he gives with a living example to recognise the correspondence between them, especially with respect to shade of colour. The picture which Erasmus Wilson, in his work on diseases of the skin, draws of roseola annulata permits of scarcely any doubt as to the identity of the two diseases. He notes the tendency to peripheral extension of the patches, with fading in the centre, and, as a characteristic symptom, that the disease spreads from above downwards.

Rayer regarded roseola as a form variety of erythema, not as a variety of disease, and brought it in relation with erythema annulare, and with a stage in the development of erythema exsudativum multiforme; and Hebra, who at first almost exclusively adhered to Rayer, has given the view of the latter a still more definite form. Again, it is to be ascribed to Hebra's influence that the roseola annulata of Willan has entirely been eliminated from most English and American works on skin diseases. It so happened that in consequence of an erroneous idea an independent, well-marked form of disease vanished as such from literature, and that Gibert, Bazin and Hardy believed that they had discovered a previously undescribed skin disease, to which, consequently, they applied a new name. I cannot regard the choice of these latter as an altogether happy one; and Duhring, though he keeps Bazin's name, is not altogether satisfied with it. I would drop the term "pityriasis" as applied to it, since it has led to erroneous views (Metton, Nicol) that there is some connexion between it and the so-called pityriasis rubra. Yet there are scarcely two forms of disease which are in all respects so different as these two. There we have an inflammatory disorder which affects the skin in its entire thickness and over large areas at once, without special localization, and in which the epidermis separates itself continuously in large flakes. Here we have an affection of the uppermost layers of the skin, taking the form of patches, having a constant localization, accompanied by the formation of very fine, bran-like, and firmly-adhering scales. There an incurable disease of extremely chronic course; here a spontaneous disappearance of the individual eruptions in course of a few days, sometimes only seeming to have a tolerably protracted duration occasioned by recurrent outbreaks. One cannot place two diseases so widely differing near one another in classification, as must occur if we assume as distinctive a symptom of secondary significance, viz., the desquamation.

I have elsewhere proposed that the earlier name roseola, should it be retained, ought to be reserved for inflammatory forms alone (R. cholerica, typhosa, syphilitica), and to reckon the simple hyperæmic patches as erythema. Here, then, we can speak of a roseola, one which, as a rule, is covered with scales, and possesses the peculiarity of spreading peripherally; hence its chief characters are reflected in the term roseola furfuracea herpetiformis.

With reference to the etiology of the disease, while in my cases young persons alone were affected, Duhring has met with it in those more advanced in life, so that nothing positive can yet be stated with regard to this. Besnier writes me that he has found fungi deep in the epidermis, their demonstration being difficult. The spores in size resembled those of microsporon furfur., but were scattered, as a rule, and not in groups, like them. There was little mycelium, usually broad. This would serve to explain the contradictions in clinical characters which I have noted, and we may have here a new dermatomycosis which approaches nearer to pityriasis versicolor than to tinea tonsurans.

ARTICLE III.—*The Treatment of Syphilis.* By FRANCIS CADELL, F.R.C.S. Ed.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2nd Nov.* 1881.)

BEFORE describing the method I adopt in treating syphilis, it is necessary to consider the state of medical opinion upon the subject. Since syphilis has been recognised as a disease, mercury has been trusted to as the chief remedy. In the present day mercury has been called by some a vital antidote to the syphilitic poison. Dr Farquharson, in a recent work on therapeutics, says of mercury in its relation to syphilis, that "it may be considered a specific, or at least a vital antidote." It is a source of wonder to me how medical authors can use such vague phrases regarding drugs, when no such thing is at present known as an antidote to a vital poison. When on this subject I will quote Sir Joseph Fayrer's conclusions regarding the probability of finding an antidote for snake poison. He says, "To conceive of an antidote, in the true sense of the term, to snake poison, one must imagine a substance so subtle as to follow, overtake, and neutralize the venom in the blood, or that shall have the power of counteracting or neutralizing the deadly influence it has exerted on the vital forces. Such a substance has still to be found, and our present experience of the action of drugs does not lead to hopeful anticipation that we shall find it." What Sir Joseph Fayrer says of one vital poison we may say of the syphilitic poison, that no antidote has been found for it, and there is little prospect of such a discovery.

But it is the fashion at present to call the old treatment of syphilis by mercury a tonic treatment, and so sink the idea of its having a specific character.

Mercury is now said to have the effect of increasing the red corpuscles of the blood, and thus benefiting the anæmic condition found in syphilis. Mercury, however, does not increase the red corpuscles in non-syphilitic anæmia; so that if it does so in syphilitic anæmia, it must be by a specific action on the poison. This, I hold, there is no evidence for believing.

In the so-called tonic treatment mercury is given with the utmost precaution. Even its physiological action is deprecated, care being taken, by means of astringent mouth-washes, to prevent the gums getting sore. A minute dose is given in a guarding tonic vehicle, and the most careful local and hygienic treatment employed, and this is continued for from two to four years. In Mr Lane's *Lectures on Syphilis*, second edition, published this year, 1881, although a staunch believer in the efficacy of the mercurial treatment, he makes the following extraordinary statement regarding it. "There are," he says, "two classes of patients in which the abstention from mercury may be advisable: first, those who are in sound health and capable of throwing off the morbid influence without assistance; and, secondly, those in broken-down health, or in whom there is an evident strumous or consumptive tendency, which may render it desirable, if possible, to dispense with a mercurial course." The patients in the first class have to do without the benefits of mercury because they are too strong to require it; those in the second class have to do without it because they are too weak to stand it. The poor debilitated creatures in the second class have peculiarly hard measure meted out to them. Suffering from syphilis, they are now in a position to have their thin blood transformed into a healthy fluid by that wonderful red corpuscle manufacturer and specific tonic, mercury. But just because this class of patients require all the assistance drugs can give them to enable their debilitated frames to throw off the syphilitic poison, Mr Lane denies them the benefits of the drug which is still most widely approved of for the cure of their disease. This seems to me a thoroughly illogical position for mercurialists to hold. If mercury is good for anything, it ought to do most good where a remedy is chiefly required, and that is among the weak and feeble.

When beginning practice in Edinburgh, now nearly twelve years ago, I was led to discard mercury in the treatment of syphilis from the experience I obtained of the non-mercurial treatment while watching the practice of Professor Boeck and others who did not believe in the specific action of mercury. Since then I have steadily practised the non-specific treatment of syphilis, and, by watching the course of many cases for a length of time, have come to the conclusion that it is the best method, and the one least likely to be followed by gummatous complications. Believing that the anæmic state of the blood and the depressed condition of the vital powers (which certainly occur during the course of syphilis) can be quite safely combated without mercury, I have trusted entirely, in the treatment of this disease, to the blood-forming and tonic medicines which are found useful in similar conditions of the body in other diseases.

I shall now, as briefly as possible, describe the treatment adopted.

Syphilitic Chancre.—Whatever be the amount of induration or ulceration connected with this sore, the treatment of it should be conducted on ordinary surgical principles. No mercury is required either internally or externally, and the sore will be found to behave very much the same as other ulcers do under similar conditions when submitted to rational treatment. Caustics are rarely necessary, and should only be applied when they will assist the process of healing, and not under the expectation that even in the earliest stage of the chancre they may ward off constitutional infection. I hold with Ricord that the appearance of the chancre is the first indication that the blood is contaminated by the syphilitic virus. When it is considered necessary to apply nitric acid for surgical reasons, a plan has been suggested by Dr Keyes of placing first a of pure carbolic acid on the sore, and then drying the surace with blotting-paper, before applying the stronger acid, the well-known anæsthetic properties of carbolic acid making the subsequent application less painful. There is an attempt at present to resuscitate the treatment by excision of the chancre, in order to prevent constitutional infection. This practice has not been found successful, for reasons stated above when speaking of cauterization. Water dressing or any of the ordinary astringent lotions may be applied according to indications. Boracic ointment and iodoform are also useful applications, more especially the latter. It is best to apply iodoform in powder, and if it were not for its persistent smell it would be very generally applicable. The addition of tannin has been recommended to lessen the smell of iodoform, but it makes little difference. By these simple means the worst forms of chancre will heal, although it may be necessary also to give tonics to improve the condition of the patient, when that is required.

In the lymphatic engorgement which accompanies the syphilitic chancre, suppuration is rare, and even when it seems most imminent it is well to refrain from using the knife, as it is often astonishing how resolution may take place even when fluctuation is seemingly distinctly felt.

In a case of indurated chancre with multiple adenopathy it is necessary at once to consider how best to prepare the patient to resist the depressing effects of advancing constitutional syphilis. He must be warned that in order to get well over this tedious and often severe illness, a high state of bodily health has to be maintained, the most scrupulous cleanliness practised, to keep regular hours, eat plainly, take stimulants in very moderate quantities and only with his meals, and to give up the use of tobacco absolutely in all its forms. The state of the mouth should be carefully attended to in order that no local source of irritation to the mucous membrane may be allowed to exist. Among some of the first symptoms of constitutional syphilis, appearing often before any skin eruption, are periosteal swellings and bone pains of a more or less transient character, the pains being worst at night, and having a tendency to subside on the development of the skin eruption. For these symptoms iodide of potass in gr. x. doses is useful, but only as directed against the bone and periosteal symptoms, and not as having any special reference to this the so-called secondary stage of syphilis. I believe iodide of potass to be practically useless for the relief of any symptoms occurring during the secondary stage, except those above referred to.

After these preliminary symptoms, which are not constant, come the eruptions of the skin and mucous membrane, falling off of the hair, affections of the nails, eye, etc.

There is now invariably a tendency to anæmia, with depression of vital power, and to obviate these conditions is the chief aim of treatment.

At this stage, and often before, mercurialists begin their specific treatment, and the most eminent advocates of the method recommend that it should be continued without intermission for two years at least. It may be of interest to give here shortly the views of Bärensprung on the advantages of the non-mercurial over the mercurial treatment. Although formerly a strong mercurialist, he raised his voice in Berlin against the system. He believed that mercury caused the secondary manifestations to disappear, but did not hinder the further development of the syphilitic process. The outbreak of new symptoms is hindered, and in this way the course of the disease is prolonged. Bärensprung further asserts that, syphilis being a deep-seated disease of the whole organism, cases of rapid recovery under a few weeks are of rare occurrence, whatever the treatment may be. As a rule, recovery is very gradual, and may follow either mercurial or non-mercurial treatment. The advantage secured by the first is the rapid disappearance of the several symptoms of the disease; but this is more than counterbalanced by a double disadvantage, for, as mercury has an undermining effect on the entire constitution, the development of local disorganizations is favoured; and as the disease often for months and years remains latent, the ultimate recovery is protracted. The difficulty of the non-mercurial treatment is increased, especially at the commencement of the disease, by the severe and diffuse manifestations of symptoms not being hindered, and these symptoms being only slowly made to disappear; but, in return, it holds out the great advantage that the disease never remains concealed when it is not cured, and the ultimate recovery is at anyrate advanced. This is a fair statement of the position of the non-mercurialists. Any influence mercury may possess over the superficial symptoms of early syphilis is, I believe, entirely due to its local action as a skin stimulant, whether it be given internally or applied externally, and that it has no specific action on the poison itself.

The treatment I find very successful in secondary syphilis is by supporting the general health, administering tonics, especially iron, when required, and insisting on careful attention to the hygienic rules already laid down. By these means a gradual and certain recovery will be brought about, not by any empirical nostrum or specific, but by the ordinary rules of rational medicine, which might be employed equally well in the treatment of similar conditions occurring in any other disease.

Local treatment is useful for the sore throat and mucous patches occurring within the mouth during this stage of the disease. Astringent gargles, with occasional touching of the patches with nitrate of silver, assists the healing. The moist papules or condylomata found between two skin surfaces and in the neighbourhood of the vagina and rectum merely require cleanliness and dryness for their removal. Dryness may be secured by the careful dusting of the part with fuller's earth, kaolin, starch, or such like substance.

In tertiary syphilis, or the stage of gummatous deposits, iodide of potass is found to be of immense benefit. It may be combined with tonics, carbonate of ammonia, and cod liver oil, when these remedies are indicated by the state of the patient. Gummatous tumours are treated as follows:—*1st*, What ought not to be done. Do not remove gummata either by the knife or caustic. Abstain from opening a gumma even when fluctuation is present, as resolution may occur at any stage of its progress. Examples abound where gummata on the point of opening have been seen to diminish and become absorbed under iodide of potass. *2nd*, What is to be done. Give iodide of potass in large and increasing doses, beginning with gr. x. thrice daily. The production of gummata is often combined with a low state of the organism, either anterior or foreign to the diathesis, or engendered by it, for which tonics and cod liver oil should be administered. In the early stages blistering is found to be a useful adjuvant to the internal treatment. After gummata have opened and formed ulcers, ordinary surgical principles must be our guide in treatment.

The same lines of treatment are to be followed in congenital syphilis.

In conclusion, I wish to say a few words with regard to the preventive treatment of syphilis and venereal disease in general. It is not the duty of the medical man to advise the use of precautions during illicit sexual intercourse in order to prevent the spread of venereal disease, as by so doing he would give medical sanction to the practice of vice, and pander to a common delusion amongst young men that sexual intercourse is a physical necessity. But although it is not the duty of the medical man to teach the individual to protect himself, it is the duty of the State as far as possible to lessen the amount of contagious disease. This I believe will not be done by the Contagious Diseases Acts at present in operation. The reduction of venereal disease can only be brought about by a law which would act equally on men as well as women. Let an Act be passed making it penal for any person knowingly to infect another with venereal disease. Convictions, no doubt, would be difficult to obtain; but however rare they might be, the knowledge of the existence of such a law would have a salutary effect in diminishing the amount of venereal disease.

Every surgeon who has had much venereal practice must know that men are much to blame for the spread of disease. It is very disgraceful that it should be so, for men almost invariably know when they are diseased, and they have no excuse, like the unfortunate women who live by prostitution. Any enactment that would prevent men as well as women from propagating venereal disease ought to receive a vigorous support from the medical profession.

ARTICLE IV.—*Ozena.* By Dr MAX-SCHÆFFER of Bremen. Translated by Dr KIRK DUNCANSON, Surgeon to the Ear Dispensary.

OZENA, according to the author, has always a diathesis for its primary cause—scrofula or syphilis. The diseases peculiar to bone and to cartilage can equally produce it, but these rarer forms ought to be distinguished from the preceding.

On account of their anatomical structure, the nasal fossæ are particularly propitious for the manifestations of constitutional diseases. The mucous membrane of the olfactory and respiratory regions is provided with innumerable glands. In the naso-pharyngeal cavity the glands attain, according to Luschka, the size of a pea or a haricot. The secondary cavities of the nasal fossæ are, on the contrary, poorly supplied with glands, with the exception, however, of the maxillary sinus. A considerable afflux of blood is necessary for the secretion of these numerous glands. This is favoured by the spongy and erectile structure of the nasal mucous membrane, the tissue of which resembles, according to Voltolini, that of the corpora cavernosa et urethra penis.

Ozena is a special disease; it affects individuals attainted with constitutional diseases. These individuals offer a favourable soil for the development of the ferment which decomposes the secretions of phlegm and communicates to them a loathsome odour.

The author distinguishes, in the progress of ozena, a stage of hypertrophy and a stage of atrophy. In both ulcerations of the mucous membrane and of the deeper parts may take place. In the hypertrophic stage the secretion is abundant, thick, and creamy. It flows outward with difficulty, on account of the frequent considerable swelling of the mucous membrane; it becomes accumulated in thick crusts, especially in the naso-pharyngeal cavity. These crusts, on being detached, give place to hæmorrhages and leave after them erosions which become extended and are changed into ulcers more or less deep. The mucous membrane is livid, thickened, and can be deeply depressed by the probe.

In the atrophic stage the mucous membrane is pale, thin, strongly adherent to the subjacent bone. The secretion is less abundant, fluid, viscous; it forms finer crusts. The opacity of the secreted liquid is due to the epithelium decaying or becoming cloudy. The glands are destroyed, the mucous membrane undergoes a like transformation. The turbinated bones themselves participate in this retrograde metamorphosis; they are atrophied. It is this which makes the nostrils appear considerably enlarged.

When there exists an hereditary syphilis for the cause, ozena may frequently be developed in the first weeks after birth. The hypertrophic stage, in these cases of ozena, will have a duration of from eight to ten years. This duration is the same for scrofulous ozena. In the ozena of which the cause is an acquired syphilis, the duration of the hypertrophic stage is much shorter—from six months to one year. Here the direct cause is not a disease of the mucous membrane, but an inflammatory swelling of the periosteum of the cartilages and of the bone. Frequently the septum is depressed and the vomer becomes necrosed. When we remove the necrosed parts by an operation the ozena disappears at once. At the commencement of the disease the mucous membrane often presents an extraordinary swelling which we do not see in non-syphilitic ozena. It is necessary, in these circumstances, rapidly to reduce the inflammation by a local and general treatment, which ought to be instituted with the greatest care.

Scrofulous ozena generally shows itself about the ninth or twelfth year.

As to the therapeutics of this unbearable disease, it is in the first place necessary to clean the nasal fossæ, to get rid of the putrid secretions as well as the crusts. We ought for this purpose to employ the English syringe; the other means are insufficient.

We make injections twice a day with a solution of chlorate of potash in the proportion of one tablespoonful of salt to one litre (35¼ fl. oz. and 11 minims) of tepid water. In the atrophic period, the author introduces into the nasal fossæ tampons of cotton-wool, which he leaves there for several hours in the interval of the injections. After eight days of this treatment the bad odour has most frequently disappeared.

The numerous observations of poisoning from chlorate of potash ought to make us careful in using it. For this purpose the author uses alternately solutions of this salt with weak solutions of permanganate of potash, and of strong solutions of sea salt with the addition of some drops of tincture of iodine. He distrusts carbolic acid, as he has noticed that the patients subjected to other treatment recover the power of smell, whilst after treatment by carbolic acid this sense is completely lost. For syphilitic ozena the author has employed with great success solutions of iodide of potassium, of bromide of potassium, and of sodium.

It is indispensable that the patient should be carefully taught to use the English syringe, without the proper use of which all other treatment is of no effect.

Dr Max-Schæffer, besides, at every stage of the disease employs insufflations of various powders—Crystalline nitrate of silver very finely powdered 0·1–1·0 ad talc 5·0; sodæ benzoat. 1·0, talc 5·0; acid boracic. pulverat. pur.; alum pur.; tannin pur.; iodoform pur. in syphilis.

If the mucous membranes are hypertrophied, they are cauterized with the galvano-cautery. In caries of the bone the ulcer is scratched out with the spoon. Necrosed bones must, if possible, be at once removed. In three cases Dr Max-Schæffer removed the entire vomers, after which the ozena very quickly disappeared.

Whilst we employ local treatment it is necessary to pay great attention to the general treatment, constitutional, hygienic, etc., which at all stages of the disease is of the utmost importance.

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ARTICLE V.—*Gleanings from my Midwifery Case-Book.* By J. A. ERSKINE STUART, L.R.C.S. Edin., Heckmondwike, Yorkshire.

SINCE coming here in the month of April to take up the practice of the late Mr Oldfield, I have had some very interesting midwifery cases, which I now venture to record.

General Remarks.—I have found the women in this district, as a rule, of poor physique and easily worn out by the pains of labour. To show this, I find that since coming here I have had to use forceps in the proportion of once in every six cases, while at Dunse, where I practised up to April of this year, I had only to use them once in every twelve cases. In this neighbourhood, too, they are not so soon strong again as at Dunse, and make poor recoveries as a rule, many breaking down after a few months' suckling. The reason of all this is, in my opinion, the practice that many women here adopt of working in the blanket and carpet factories after they are married, and these factories, as is well known to medical men in this neighbourhood, cause a great deal of nervous prostration. I have numbers of people coming to consult me, who complain of nothing but a general sense of *malaise*, feeble appetite and sleeplessness being the prominent symptoms. In this district the women are all confined in their ordinary dress, and after delivery are allowed to lie quiet for an hour and a half, and are then undressed and put clean and comfortable into bed. This system has its advantages, but in cases of flooding I consider it most dangerous, for it prevents rapid compression of the uterus. However, I think the Scotch system of being put to bed after the "waters" break is, after all, the best for the accoucheur, if not for the patient, if ordinary precautions are used to protect the bedding and patient's night-dress. With these general remarks as an introduction, I now hasten to record my cases.

CASES.

I. *Twins. Double Version.*—Mrs B., aged about 35. I was sent for at 7.30 A.M., and, on examination, with great difficulty felt the child, but could not make out the presentation, so high up was it. As she had been bothered with false pains doing nothing, I administered twenty grains of chloral hydrate and left her. Was not called for till three in the afternoon, when I found the os considerably dilated, and made out a shoulder presentation. She was enormously distended—in fact, uncomfortably so—and her friends suspected twins. I now performed turning, getting the child delivered in a few minutes. As far as I remember, the "waters" had broke in the morning. On preparing to extract the placenta, I found a second child presenting with the vertex in the first position, and expected it to be born easily, as the patient had a roomy pelvis. I gave a dose of ergot, but with no effect, and, on examining shortly after, found that the umbilical cord and hand were coming down past the head. I had thus to decide between forceps and version, and, as I had been turning before, chose to turn again, so at once proceeded to do so. The waters had previously broken, but this did not alarm me, as the woman had such a roomy pelvis. However, I had a more difficult task before me than I imagined, for though I easily got a hold of both feet, nothing would induce the head to move out of the pelvis. However, after working nearly an hour, and just at the moment when the patience of both doctor and patient seemed exhausted, the head suddenly yielded to my efforts, and I turned easily. The child was very difficult to resuscitate, but after nearly an hour's work with Silvester's method I got breathing fairly established. They were two fine girls, much above the average in size and weight. The patient did well afterwards. The children lived and throve well till they were three months old, when they both died in twenty-four hours from a form of epidemic diarrhœa accompanied with convulsions, the one beginning to manifest precisely similar symptoms to the first as soon as she had died.

II. *Spina Bifida* (*lumbar*).—Mrs J., primipara, had confinement in eighth month of pregnancy. Large globular tumour in lumbar region, pulsating. The gap in the vertebral arch was very distinct. Despite all efforts to keep the surface whole by means of a wash-leather pad, it ulcerated, and the child died in convulsions a few weeks after birth.

III. *Apoplectic Ovum.*—Mrs H., eight months pregnant, sent for me, complaining of hæmorrhage. On examining her, found a large fleshy mass over the os, and I was misled into thinking it placenta prævia. I gave her a draught of chloral and ordered her to be kept quiet. During the night an apoplectic ovum was extruded without much pain. A good deal of bleeding followed it. I secured the specimen, and found the fœtus well marked, probably about the third month, quite putrid, and breaking almost if you touched it. The cord could also be seen, and the decidua were well marked and enclosing a fibrous mass which, on being incised, was found to be full of broken-down clot, and large, tortuous vessels ramified all over the surface of the incision. I preserved the specimen in chloral.

IV. *Imperforate Anus.*—Mrs C., primipara, was delivered by forceps of a male child, which never had a motion for the first three days of its life. Suspecting something wrong from the abdominal distention and tenderness, I, on the evening of the third day, passed a knitting-needle into the anus, and found it was arrested half an inch from the sphincter. Having called in the assistance of my friend Mr James Turton, we proceeded to dilate the passage with a gum elastic catheter well oiled, and then, examining with the little finger, found a strong fibrous band stretching across the bowel half an inch from the sphincter. We at once decided to operate. Passing my little finger into the rectum, I took a tenotomy knife, and sliding it in with the cutting edge next my finger, I plunged it through the fibrous obstruction, and, inserting my little finger into the rent, tore it completely across. As soon as the knife pierced the obstruction there was an escape of flatus and meconium, accompanied by a noise (like a bladder being burst) so loud as to be heard by the mother, who was in the room overhead. A large quantity of meconium now passed, and the child seemed to get great relief, the abdomen falling to its natural size. On passing the little finger beyond the divided obstruction we found that two inches of the bowel were awanting, so that it was impossible the child could survive, as the fæces would pass into the general body cavity. Accordingly, although the infant slept well after our departure, and the operation seemed eminently successful so far as it went, the child died suddenly that evening in convulsions. I ascribe the death in part to the lesion not being discovered earlier, for at the time of operation there was slight peritonitis. This would weaken the child very much. However, I was well pleased that we had at least given temporary relief. Nothing short of colotomy would have answered in this case, and it would probably have ended fatally as well.

V. *Difficulty in Delivering with Simpson's Forceps.*—One morning early in June I was roused up to go to render assistance to Mr Wiseman, who was then doing duty for Mr Turton, who was absent on his honeymoon. I took my midwifery bag with me, and found that he had been unable to deliver the woman, a primipara, with Simpson's forceps. He had been attempting to deliver for three hours, and with no success, as he could not make the head move. I had a pair of Barnes's forceps in my bag, which instruments I invariably use, as they are not only longer, but are also lighter, not so broad in the blades, and especially good for rotating the head round the pubis. Well, I found the head on the perinæum, tightly jammed there, and very little room to apply forceps, which I afterwards found was due to a projecting sacral promontory. I applied the blades easily, and locked them, delivering the patient of a living child in two minutes. In looking at the two kinds of forceps placed side by side, I saw where Barnes's had the advantage, the narrowness of the blades and their lighter get up giving more room for application, and not giving the same resistance to the vaginal walls as the large, broad blades of Simpson's. The whole difficulty depended on want of room owing to the extra substance of the blades. It may seem strange in me, an Edinburgh student, to disparage Simpson's forceps. Still, I was always in belief they were the best till some few years ago, when an eminent Edinburgh obstetrician advised me strongly to get Barnes's, as they were the most suitable for all kinds of cases. I also read carefully the discussions on the forceps in the Obstetrical Society of London, and it was clearly shown by Dr Barnes that in Scotland there are a far larger proportion of craniotomies and cephalotripsies, owing, as he says, to Simpson's forceps not being long enough to reach the high cases. The advantages I claim for Dr Barnes's instrument are these:—1. Lightness of make; 2. Narrowness of blades; 3. Straightness of blades, the pelvic curve not being nearly as well marked as in Simpson's; 4. Their length. Consequently, from all these points we have an instrument capable of doing almost anything that the forceps should be expected to do. Their suitability for bad occipito-posterior cases where rotation is necessary will be at once apparent, and I have found their benefit in such cases. Simpson's has the finger-rests, but I doubt if the loss of them makes much difference, as you can get your fingers inside the lock in Barnes's. Whatever may be the true merits of the case, this case is proof positive of the advantage of Barnes's instrument in a certain class of labours.

VI. *Prolapsus Funis.*—Mrs E., multipara, sent for me at 9 in the morning. On arriving there I found the head on the perinæum, and the umbilical cord protruding from the vagina and still pulsating. As the labour was almost completed, I waited to see what effect it would have on the cord. During each pain the pressure stopped the pulsations, but I always managed to free it between the pains, and it always pulsated in these intervals. As I saw, if left to nature, I might get a still-born child, I introduced the first and second fingers of my left hand into the rectum, and, pressing on the child's chin through the intervening septum, rotated the occiput round the pubis, and evacuated the head. The rest of the body I delivered by traction. The child was black, and did not breathe. However, by a judicious application of Silvester's method, and bleeding the cord, I got her round in about five minutes. The patient tells me that the cord only came down about ten minutes before I entered the house. Another ten minutes would have decided the child's fate, as it was hard to bring round, and I believe my rotation also saved five minutes. This I have found an excellent resource in primipara where the perinæum is tense, saving in many cases having to use forceps when the head is on the perinæum. I may state that my predecessor here, Mr Oldfield, and Dr Lee of this town, have been in the habit of using the fillet. They have both told me that it saved many a low forceps case, and could be applied almost unknown to the patient, the only disadvantage being the ribbon-shaped mark which it leaves on the child's occiput.

VII. *Spina Bifida (lumbar).*—Mrs G., primipara, was confined of a small female child, having distinct globular swelling over the lumbar region. No gap in the vertebral arch could be felt, although it may be filled by only imperfect tissue, and may yet give trouble, as the child is only ten days old.

In conclusion, I may state that these cases are not here narrated as *show cases*, but merely as a few jottings to point out what an interesting field the ordinarily barren practice of midwifery may afford.

ARTICLE VI.—*Case of Accidental Poisoning by means of Cyanide of Potassium.* By WILLIAM SANG, M.B. Edin., Broughty Ferry.

J. M., a police constable, left a village in this neighbourhood, in company with three other men, in a dogcart, on the night of 17th October 1881. They drove a distance of about three miles, when J. M. and another man jumped off, allowing the dogcart with the other two men to drive on. They stood a few minutes talking to each other, then parted to go home, each in his different direction. About twenty minutes after this the constable was found in the middle of the road dead, and not over two hundred yards from where he had left his friend. The alarm was given by two men who happened to be passing and found the body. They procured a waggonette and had it conveyed back to the village from which the dogcart had started. All the four men had been "tasting," but were not the worse of drink. On the afternoon of the following day, and about fourteen hours after death, I made a post-mortem examination of the body, with the view of ascertaining the exact cause of death. The following are the notes:—

The body was that of a man about twenty-eight years of age, well-built and stout. Cadaveric rigidity had passed off in the wrist and elbow joints, but was present in the neck and shoulders. A slight abrasion of the skin was observed on the right forehead, and also on the dorsal surface of the middle and ring fingers of the right hand, the hand being spattered with blood. A little crusted mud was found in the anterior part of the right nostril and among the hairs of the moustache. The features were calm and composed. No odour could be detected from the body nor by smelling at the mouth. The eyelids were closed, the eyeballs were glassy in appearance, and the pupils dilated. The mouth was closed, and the teeth clenched. The hands were not clenched.

After removing the sternum and costal cartilages and slitting up the pericardium, the heart was examined. It was flaccid and slightly enlarged. A little fatty deposit was observed on the outside. The right ventricle contained only a small quantity of black uncoagulated blood. The left ventricle was empty. The walls of both ventricles were slightly thickened, and the muscular tissue slightly soft and friable. The valves were normal, but in the ascending portion of the aorta commencing atheromatous degeneration was observed. The lungs were engorged with blood. The larynx was congested. There was no frothy mucus present. The stomach was empty. The mucous lining was much inflamed; towards the pyloric end it was of a darkish brown colour and pulpy. A distinct odour of hydrocyanic acid was felt, also most marked towards the pyloric end. The liver was engorged. When removed and incised no odour of hydrocyanic acid could be perceived, and a watch-glass moistened on its concave surface with a solution of nitrate of silver and held over it gave no reaction, and no crystals characteristic of cyanide of silver could be found on microscopic examination. The kidneys also seemed slightly engorged. The bladder was empty, and its mucous lining normal in appearance. One or two small bloody points were seen in the white matter of the brain (about the centre of the cerebrum). There was no effusion in the ventricles.

It was quite clear, considering the above appearances, that the state of the heart was not the cause of death, and, although slightly fatty, had no bearing of any consequence on the case. The pockets of the deceased were therefore searched to see if any information could be obtained. A paper wrapper torn up, such as might be found round a six ounce mixture, and also some confections, were found.

At my request, on the following morning a careful examination of the ground where the deceased was found was made, and the following information obtained:—

1st, On the spot where the deceased was picked up, traces of vomited matter were seen.

2nd, Within a very short distance of the spot was found a druggist's label, with the name "Cyanide of Potash" distinctly written on it. The inmates of a house on the roadside also stated that about one o'clock in the morning a whistle was blown very loudly, and immediately afterwards a man's voice was heard shouting "Alick." Following up this information, the druggist stated that he had sold or given (I do not know which) the man a small quantity of this substance, about a couple of drachms. He had been recommended by some custom-house friend to procure it for cleaning his buttons and strap-buckles. At the same time he got a packet of mixtures. The case was now perfectly evident. The man had mistaken, in the dark, a piece of cyanide of potash for a "sweetie."

This case is interesting. For one thing, poisoning by means of cyanide of potash is seldom met with, and the circumstances connected with this case are peculiar. For another, I never knew before that such a deadly poison was occasionally made use of by the "buttoned tribe" to save themselves a little time and trouble.

ARTICLE VII.—*Case of Hyperalgesia of the Lower Extremities, followed by Pointing of an Abscess below Poupart's Ligament and terminating favourably.* By W. J. BROCK, M.B., etc., Physician to the Anderson's College Dispensary, Glasgow.

I HAVE been induced to record notes of the following case, both on account of its exceptional character and its difficulty of diagnosis:—

W. R., aged 17, came under my care on the 9th July 1880. In childhood, for about two years or more, he suffered from what appears to have been caries of the tarsus of the left foot, which has left two cicatrices below and anterior to the external malleolus. His health since then, and up to a month within the time of the illness about to be detailed, was good. His general appearance is that of a strumous lad.

About the beginning of June 1880, while apprentice to a grocer, he was noticed by his friends to exhibit an extreme irritability of temper, but they observed nothing else in his condition to call for remark. He never at any time complained of pain or weakness anywhere until the 8th July 1880, when he suddenly took ill with headache and severe vomiting. There was no distinct rigor, but a chilliness was felt that morning, which, however, excited little attention, partly from his unusual sensitiveness to cold at all times, and partly because he was suffering from a slight cut on the little finger, then noticed festering. (The finger, it may be remarked, did not heal for some six weeks.) The vomiting set in and continued without intermission till the evening of the day following, when I was first called in to see him.

On arrival I found him in the following condition:—Skin dry, and temperature 105°; tongue slightly furred; urine scanty and high-coloured. His mind wandered. He rarely spoke sensibly except when spoken to. He was excessively irritable, and did not care to be asked questions. He stated that he felt no pain.

Dover's powder with quinine was administered, and a 10-grain dose of the latter given again in three hours. Next morning the temperature was found to be 101°, the vomiting had entirely ceased, and he seemed altogether improved. A new symptom, however, soon appeared. On the 11th he was seen by a medical friend in my absence, when he complained much of pain behind the left great trochanter and down both limbs, and he felt as if fixed to the bed by asphalt. Morphia was given hypodermically to relieve him. He was slightly delirious during the night of the 11th. I again saw him next morning, the 12th. His temperature now was 102°, and he was perspiring freely. There was almost entire inability to stir in bed or to move the lower limbs. When asked to bring his feet together, he tried to do so by getting the ball of the great toe of either foot in contact with some object, as the bed-clothes, and used it and the heel alternately as a fulcrum to approximate his limbs. When raised in bed he screamed, and even the attempt by his mother or brother so to lift him produced the same effect, which at one time caused them to doubt the genuineness of his suffering, as interference in any way on my part was *comparatively* well borne. His irritability now rather increased, but delirium disappeared. There was no pain in the back, but on the slightest movement or on the shaking of the bed he screamed from the pain about the left hip. His sleep was much disturbed, owing to starting of the limbs. Jerking of the limbs was more readily produced by touching or tickling the skin of the feet or legs than it is in the normal state, giving rise to excessive pain when so excited, and I therefore considered that reflex action —*i.e.*, skin reflex—was increased. But it was not only the starting that caused pain: the actual touching or slight nipping of the legs produced a painful sensation. There existed, then, that condition known as hyperalgesia. The hyperalgesia extended up to, but not beyond, the lumbo-sacral articulation. He seemed more sensitive to pressure made over the left lateral half of the lower part of the sacrum than to that made at any other place. There was no priapism. Frequency of micturition was almost the only bladder symptom noticed. (Once or twice during the course of the next two days he passed urine in bed, but whether involuntarily or not we were unable to determine.) The bowels were constipated and required enemata to relieve them. He still felt as if he were fixed to the bed.

The symptoms during the 13th and 14th were similar to those of the 12th, the temperature remaining about 102°, and the pulse 80 and somewhat compressible. During the night of the 14th the symptoms were rather worse, and my fears of a spinal meningitis became strong.

On the 15th Professor Gairdner saw him in consultation, and we determined upon treating the case as one of inflammation of the spinal cord or its membranes. The patient was removed that evening under chloroform to a spinal bed, and placed in the prone position. Dry cupping over the loins and administration of ergotin were resorted to. There was no change next day, but by the 18th the temperature had fallen to 101° in the morning and 101°·5 in the evening. He slept fairly well on the nights of the 19th and 20th, and on the morning of the 21st his temperature touched 99°·6, to rise again, however, to a little over 100° on the mornings of the next few days—the evening temperatures being higher by about 1 to 1·5 degrees. His nights now were comparatively good, and by the 25th the hyperalgesia was quite gone, and he was able to move both legs below the knee without causing pain. During the next fortnight, with the exception of losing flesh daily, he remained much in the same condition, having a temperature steadily keeping about 100°, with slight evening exacerbations. The urine at this time contained a large quantity of phosphates. On the 8th of August his temperature rose, and he became restless and more irritable. Quinine was again tried in large doses, with the effect of reducing the temperature and the irritability as well. The good effects of the drug became apparent to himself, and he soon requested its continued use; and it is noteworthy that without a dose of 10 to 15 grains in the evening he was unable to pass a comfortable night during the next four weeks or more. The daily quantity consumed during this period would average about 20 grains—the largest dose administered on any one occasion being 15 grains. On the 8th of September the temperature became normal, and soon his appetite so far returned that he could relish solid food. Up to this time his diet consisted of beef-tea and of milk with lime water.

He was now put upon Easton's syrup in addition to the quinine. His symptoms steadily improved till the end of the month, when he was able to rise and stand; but when he did so he rested entirely on the right leg. In the beginning of October, while sitting up, he had a shivering, and in a day or two following a very severe rigor; the temperature, however, rose no higher than 99°. On the 8th he complained of pain over the left iliac region and over the anterior superior spinous process of that side, and there was slight tympanitic distention of the abdomen. On October 25th a swelling appeared below Poupart's ligament, and another over the gluteal region, a little behind a line drawn from the anterior superior spine to the upper margin of the great trochanter. Professor Gairdner again saw him, and concluded that, taking the case altogether, the symptoms pointed with great probability to some form of suppuration in connexion with the spinal canal or emerging nerves.

On the 27th I made an incision, under carbolic spray, 3½ inches below Poupart's ligament, took off about 40 ounces of somewhat serous but otherwise laudable pus, and dressed the wound antiseptically. Next day the temperature rose to 101° and the pulse ran about 140. The urine was scanty and high-coloured, and a hectic flush was well marked. On the 29th the temperature fell to 97°, but became normal on the 30th, although the pulse was still 140. Up till the 1st November the wound had to be dressed twice daily because of the profuse discharge, which, although to all appearance thoroughly expressed at each dressing, accumulated to an unusual extent in the intervals. All the while the pus remained perfectly "sweet." I now discovered a remarkable thickening on the inside of the crest of the ilium, extending from 2 to 3 inches behind the anterior spine, and as far down into the iliac fossa as could be reached; and, on the advice of a surgeon, determined to cut down upon it antiseptically to discover whether any diseased bone existed which might keep up such a flow of pus. However, on examination at the next dressing the thickness was found to be greatly reduced in size, and it soon afterwards disappeared.

A drainage-tube 8 inches long was passed through the wound, and in a day or two more the discharge suddenly got less. Simultaneously with this his appetite improved remarkably. By the 8th of December the discharge had entirely ceased. The wound soon after healed, and at the end of the year the patient was able to walk on crutches. He limped for some time from stiffness of the leg, but steadily improved, and felt quite well in the course of another month.

He has now been in good health for over nine months, and the only apparent effects of his illness at present remaining are inability to completely flex the left thigh upon the abdomen, weariness on slight exertion, when he is noticed to have a "dragging" gait, and a very marked sensitiveness to cold (more so than before his illness), and producing on the least exposure to it a cyanotic appearance of the face and hands.

The symptoms during the early course of this case had great resemblance to those which might be expected in the first stage of spinal meningitis, but without the tonic spasms of the limbs. The appearance subsequently of an abscess below Poupart's ligament pointed with some probability to the existence of vertebral disease beginning in the lumbar region; but no diseased bone or gritty matter was detected in the discharge, though carefully looked for, no tenderness ever existed over the lumbar vertebræ, and no change in these vertebræ as to their relative position has resulted. The very favourable termination of the case suggests that the inflammatory attack may have originated lower down than the lumbo-sacral articulation. There was a region, as already noticed (the left lateral half of the lower part of the sacrum), apparently more sensitive than any other to pressure; however, no physical change was here apparent. Moreover, the extreme sensitiveness at this part may have been in some measure due to the fact that the patient referred the pain he felt when not touched principally to this region.

There remains no doubt, I think, that the inflammatory products have been conducted to their exit by the fascia covering the left psoas muscle; but as to the tissue in which the inflammation began, and as to its exact region of origin, there is room for a good deal of speculation.

In the history of the case perhaps the most interesting fact is the existence of hyperalgesia of both lower extremities. Was this due to pressure of inflammatory products upon the neighbouring nerves, or did it arise, as I think more likely, from active changes either in the membranes of the cord at its lowest part, or in the contents of the spinal canal below the *conus terminalis*, situated at the level of, say, the second lumbar vertebra?

Taking the nervous symptoms alone, they resemble very closely those known in that condition described as hyperæmia of the cord and spinal meninges, and it is quite probable they arose here in this way. Meningeal hyperæmia is described either as active or passive, and, if active here, might have been produced by collateral fluxion, or, if passive, by local venous stasis from pressure on the venous plexuses in the immediate neighbourhood of the inflammatory area.

Belief that the nervous phenomena were not due to actual inflammation of the meninges appears strengthened by the following facts:—The short and favourable course of the symptoms and their gradual relief after a few days of treatment in the prone position, the absence of distinct muscular spasm, and the absence of any paralysis.

ARTICLE VIII.—*Three Cases of Amputation at the Hip-Joint.* By RODERICK MACLAREN, M.D., Senior Surgeon to the Cumberland Infirmary.

(*Read before the Border Counties Branch of the British Medical Association, 28th September* 1881.)

SOME improvements in procedure and differences in practice as to removal of the whole lower limb have occurred of late years, and I wish to bring my experience of them under your notice in the

three following cases. I have condensed the reports from the case-books of the Cumberland Infirmary.

CASE I.—N. R., male, æt. 10, admitted 2nd April 1880. The boy had been ill for three weeks. He began with acute pains in his joints, and fever, much resembling acute articular rheumatism. The pains gradually became localized in the left lower limb, specially in the knee and hip, and for a few days before admission there had been great swelling of the left thigh.

On admission the whole of the left lower limb was swollen and tense, having the appearance of phlegmasia dolens. Touching or moving it caused acute agony. In a fortnight an abscess opened at the back and also at the inner side of the thigh, and a probe reached the upper part of the femur, bare to a considerable extent. The boy's parents decidedly declined to sanction any operation. The abscesses continued to discharge copiously, the pain and swelling of the limb were but little relieved, and the general condition became steadily worse.

Seven weeks after the admission his parents asked me to do what I thought best; and as there seemed some prospect of recovery if the cause of the discharge of pus was removed, although the boy's general condition was most unfavourable for operation, I determined to amputate at the hip-joint. I shall speak of the operation presently. For a week all went well; the wound healed except where the drainage-tube came out, the boy gained in flesh, and felt so well that he wished to get up, and asked his mother to get him crutches, but from this time he retroceded; his appetite failed, he complained of pain in the left iliac region, and there was evidence of pus collecting in the iliac fossa. Three weeks after the operation an abscess burst just internal to the left anterior superior spine of the ilium. Two days afterwards I explored the cavity, and found the ilium extensively bare. The boy's general condition became so reduced that the skin ulcerated over his other anterior superior iliac spine, and five days after the opening of the abscess, and twenty-six after the operation, he died from exhaustion. His chances of recovery would have been much greater had the operation been performed some weeks earlier.

CASE II.—A. P., male, æt. 17, admitted 24th September 1879. He had been ill for eight months. His illness commenced with an attack of acute deep inflammation in the lower part of the right thigh, resulting in an abscess, which was opened and left a discharging sinus. Three days after admission the boy was chloroformed, and a sequestrum amounting to about a third of the right femur was removed by an incision at the inner side of the thigh, a little above the condyle. For a few weeks the patient improved; the cavity from which the bone had been removed became less, and his general health got much better. In the middle of October he had an attack of erysipelas, lasting nearly a fortnight. Soon after this improvement ceased, the sinus discharged profusely, and no further filling up of the bone-cavity occurred. So in January he was again chloroformed, the cavity cleared out, and a counter-opening made at the outer side. For a time improvement followed, then a period of no progress, and then occasional attacks of pyrexia. In the end of February he was again chloroformed, all soft bone gouged away, and most effective drainage established by two large openings, one on each side of the limb. Again improvement occurred for a time, then a recurrence of the attacks of pyrexia, with deep swelling of the whole limb, profuse discharge, and general exhaustion. Towards the end of May his condition was evidently becoming critical; he was much emaciated, and suffered much pain. The femur was thickened throughout its length, and there was reason to believe that subperiosteal suppuration was progressing. On 25th May the limb was removed. He made a good recovery, and two and a half months after the operation he was discharged, with the wound healed, except a small superficial sore. A few weeks ago I heard of him as being in good health. The femur, when examined, was found hollowed out at the lower end into a large cavity, and there were some small abscesses in the cancellous tissue. The whole shaft close up to the trochanters was very much thickened by deposit of new bone, in which also were several little pockets of pus.

CASE III.—J. L., male. æt. 20, admitted 9th June 1880. He had been ill for six years with disease of the left hip-joint. Four years ago an abscess formed and opened at the lower edge of the buttock, six months afterwards another one below the spine of the ilium, and soon after a third at the back of the thigh. In 1878–79 he was in the Cumberland Infirmary for five months, and was treated by extension and drainage, without any improvement resulting. He declined operation, and was discharged in March 1879. For a time after this he improved in health, was able to get out of bed, and even occasionally out of the house; but when winter returned the discharge slowly and surely told on him, until he was reduced to a condition of extreme weakness. At last he made up his mind to run the risk of having the limb removed. When admitted to the Infirmary he was thin, bloodless, and emaciated. Four sinuses discharged in the neighbourhood of the hip, and the head of the femur was ascertained to be bare. The limb was amputated on 14th June. The cartilage and a good deal of carious bone was removed from the acetabulum. The most of the wound healed well, but profuse discharge continued from two of the old sinuses and from the inner angle of the incisions. On 21st October I removed a considerable portion of the pelvis, which was bare, soft, and semi-detached. It comprised the whole tuberosity of the ischium, the ramus, and a good deal of bone from the neighbourhood of the acetabulum. On 23rd February 1881 he was discharged, so far improved that he could get about the ward. He has since made steady though slow progress to recovery. He is now much less anæmic, can walk a couple of miles on crutches, and works at his trade, that of a watchmaker. The sinuses in his stump still discharge a little.

The three cases differ somewhat as to the cause of the removal of the limb, but they are all alike in one respect, that the disease, if unchecked, had every appearance of proving fatal. In the first of the cases death was the result, but I believe it was delayed by the operation, as the boy's condition markedly improved for a week. Had the limb been removed earlier, it is quite possible that the pelvic abscess would not have occurred, and even if it had, he would have possessed a greater reserve of strength to bear up against the exhausting effect of the discharge. The second case before operation progressed steadily downwards, though all evident cause of irritation was removed. Foci of suppuration were probably established before the removal of the sequestrum, and the development of these consecutively caused the repeated exacerbations in his condition. The third case was reduced to an extreme degree of attenuation by the long-continued discharge. He had been more than once in a condition closely approaching death. He had ceased developing for some years, and although 20 years of age, had the physical characteristics of a boy of 14 or 15. For such serious disease the removal of the limb at the hip-joint is growing in favour, and is being done with greater success than formerly owing to surgical advances, some of which are common to operations in general, others to this one specially. I do not think it ought to be regarded as a competing operation to excision. Each has its place and use. The objects aimed at by excision are superior to those which amputation can attain. The one seeks to leave a useful movable limb, the other only removes a disease which is beyond the reach of cure. But excision almost necessarily implies a long period of suppuration and confinement to bed, making large demands on the patient's strength, so it should be done at a stage when it would not be justifiable to amputate, and only when the patient's general state gives a prospect of good recuperative power. Amputation, on the other hand, is justifiable when excision does not afford a reasonable promise of success, when the patient is much enfeebled by long-standing disease, or when excision fails to stop the downward course of the patient.

The operation which I did in these cases was identical in the first and third. It was the one which Mr Furneaux Jordan has brought to the notice of surgeons. The way I did it was as follows:—First, a circular incision was made at the upper third of the thigh, the tissues being divided down to the bone by two circular sweeps of the knife. Another incision was then made from this along the femur up to a little above the great trochanter, the tissues were separated from the femur, and the disarticulation effected. Mr Jordan seems to prefer the reverse of this order making the incision along the femur and the disarticulation, before the circular incision. But the other method has the advantages of capability of greater rapidity of operation, of the deepest parts being divided last, and of the femur being quite free from all attachments before it is turned out of its socket. In the second case the operation was planned to allow of removal of the thigh at the upper third if the bone was found healthy there, so anterior and posterior flaps were made by transfixion. The femur was gently thickened, so the external angle of the wound was prolonged upwards and the bone disarticulated. The limb was so swollen that it was impossible to say before operation how much was due to the soft parts and how much to the bone. I was quite aware that in many cases such thickened bones can be left with the certainty that they will become free from inflammation and resume their natural condition; but looking to the progressive character of the case, it seemed best to remove all diseased tissue, and what I have mentioned as to the pus deposits showed that it was best to do so. In all essentials the operation was the same as the other two.

This method of removing the lower limb has many advantages over the old high double-flap operation. The hæmorrhage is much more controllable; none of the branches of the internal iliac are divided. In the high operation a large cavity is left in the centre of the stump, which takes a long time to fill up; in the low operation there is plenty of tissue, which fills up most of the space left by removal of the femur. And lastly, the tissues are divided much farther from the trunk. Now, statistics show the mortality to increase with every inch amputations of the thigh approach the trunk, due, no doubt, to the division of larger nerves and vessels, specially the former, thus adding to the shock, and to the greater muscular surface exposed by the knife. It might be supposed that a large muscular mass would leave an inconvenient pendulous stump. Such however, is not the case. Stumps absorb back to their bony base; in fact, I doubt if a stump is ever redundant. I have certainly seen many tight ones, but I cannot recall a single pendulous one. Another objection might be urged against the low operation, that it takes longer to do, but I do not think there is any great difference. Strong, free cutting removes the limb very rapidly. One very noticeable feature in all my operations was the small amount of shock. It was never sufficient to give a moment's anxiety. Though the credit of introducing this operation belongs entirely to Mr Furneaux Jordan, it is only just to the memory of an old friend to say that I have been familiar with its advantages for many years. In 1869 the late Dr Reeves reported to this Branch a case in which he amputated by flaps at the upper third of the thigh; but finding the femur diseased there, he pro-
the outer angle of the incision and disarticulated at the hip-

joint. He clearly laid down the advantages of this method of operating, and in 1876 I was present when he removed a limb by this plan. The first case of Dr Reeves was so remarkable that I have asked my friend Dr Barnes to give me an account of it.

"About fourteen years ago I was asked by the late Dr Reeves of this city to see with him a little boy, æt. 6 years, who had met with a serious accident a few weeks previously, and upon whom he proposed to perform amputation of the thigh. The history of the case showed that the boy had fallen from a wall and injured the left femur. Acute necrosis had been set up, pus in very large quantities was discharging from several openings on each side of the lower part of the thigh, bare bone could be felt with the probe in several directions, the femur at its lower third had been accidentally broken while the lad was attempting to get out of bed, and his strength had been greatly exhausted by the drain of long-continued suppuration. There could be no question of the propriety of the operation, and the consent of the relatives having been obtained, we proceeded to make arrangements. The boy lived in a miserable little den in one of the lowest parts of Carlisle, and his friends were all very poor. We were left, unfortunately, rather short of help in the middle of the operation. My work consisted in looking after the anæsthetic, and in compressing the femoral as it passed over the brim of the pubis. The doctor's groom, upon whom we had relied for handing the instruments and looking after the sponges, ignominiously broke down at the sight of blood just as the anterior flap was made, and in the absence of bulldog forceps the operator was reduced to the necessity of holding one end of the ligature with his teeth when tying the femoral. It was intended that the operation should be an amputation at the junction of the upper with the middle third of the thigh; but finding the upper portion of the femur also affected, Dr Reeves slipped his knife along the outer side of the bone and disarticulated. I should mention that all the arteries requiring ligature were tied with horsehair and the ends cut short. The flaps were brought together and also sutured with horsehair. The boy never had a bad symptom, and is now living and well."

This case was only published in the report of the meeting in a very condensed form, and attracted no attention. The second was never published. Both operations were successful, and the patients are now alive and have grown into vigorous men. These and many similar instances convinced such of us as knew Dr Reeves well that had his fine surgical instinct been balanced by more *savoir faire*, and had the element of eccentricity in him been kept more within bounds, he could have attained eminence as a surgeon.

I next come to the arrest of hæmorrhage during the operation. In the first and third cases this was done by Davy's lever. It is introduced into the rectum, and compresses the common iliac artery against the brim. In both instances it was easily introduced and applied. It answered admirably, for when it was pressed firmly against the artery arrest of bleeding was complete, and when it was a little relaxed there was just sufficient oozing to help the finding of the medium-sized vessels. This is a great improvement, by its simplicity and certainty, on other methods of arresting hæmorrhage, and in this operation nothing adds more to the safety of the patient and the comfort of the surgeon than securely controlled bleeding. These two cases were both left limbs. Case No. II. was a right limb, and neither the house surgeon nor myself could succeed in placing the lever on the vessel. Lister's abdominal tourniquet and digital pressure on the femoral at the groin were used in place of it. I am inclined to think that more experience of its use, and perhaps the help of an oil enema, would have enabled us to apply it successfully in this case. Mr Davy assures me that only physical obstruction, such as stricture of the rectum, pelvic abscess, etc., prevents its use, and my own observation on the dead body has led me to the same conclusion. It is more difficult to apply on the right side, owing to the anatomical position of the rectum to the left of the sacrum. After the removal of the limbs all the vessels which could be found were tied. Then, instead of delaying to catch every little bleeding vessel, as I am in the habit of doing with less important operations, the cavity of the stump was filled with sponge wrung out of carbolic lotion, and wrapped in gauze to facilitate removal. The stump was then somewhat firmly bandaged. Case II. was dressed antiseptically; the others were left exposed, with a pad of oakum underneath to soak up the discharge. The sponges were removed on the following day, and the wound closed with silver sutures.

The number of my cases is much too limited to allow of any general conclusions being drawn from them. I will only make this remark, that the mortality over large numbers of cases is generally put at from 40 to 50 per cent.; but if Dr Reeves's two cases are added to mine, the death-rate is only 20 per cent. These represent all that he did and all that I have done for disease.

ARTICLE IX.—*Note on Rupture of the Urethra, and its Treatment.*

By JOSEPH BELL, Surgeon to the Royal Infirmary.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2nd November* 1881.)

RUPTURE of the urethra is a surgical complication which, resulting from very varied causes and in very different conditions of local and general health, varies much in individual cases both in risk and severity, and is to be treated under equally varied principles.

Having had a large number of such cases under my care, both in hospital and in consultation, I have been led to classify them for my own guidance into three great classes, to one of which I am very briefly to direct your attention this evening.

The three varieties are:—

1. Rupture behind a stricture of old standing, with a bladder contracted as to its lumen, and hypertrophied as to its muscular coat, acting with force on a urethra dilated behind a nearly impermeable stricture, and probably with coats thinned, sodden, possibly even ulcerated, from contact with putrid alkaline urine. These cases, being ruptured in the act of attempted micturition, are at once followed by urinary extravasation, destruction to the cellular tissue from the irritating nature of the urine, are apt to be followed by rapid gangrene of scrotum and penis, extremely severe constitutional symptoms, and death, unless speedily treated by free incisions. Such cases are sadly common and too well known.

2. Rupture may occur in a perfectly healthy individual from an injury to the perinæum, unattended by fracture of pelvis or any other complication whatever. For example, a dragoon is thrown violently forward on the pommel of his saddle or on the dorsal spines of a bony old horse. A sailor, missing his hold of a rope, falls astride of a yard. A prostrate drunkard gets a kick in the back from a heavy-booted friend. Such accidents are heralded by hæmorrhage from the urethra, which is actually cut through by its forcible impact against the triangular ligament and edge of pubis. Extravasation of urine and blood may occur, which free central incisions will relieve. The case will generally recover with a urethra permanently damaged, and certain to be affected by a most severe and intractable form of stricture of the membranous portion, which, though limited in its length, is very tight and sure to recur again and again. Of these I have nothing new to say, but only to state that experience has taught me to avoid cutting and splitting or any other fresh traumatisms, and to trust implicitly to patient, gradual, and constant dilatation.

3. The third form of rupture of urethra is that so well known in mining or quarry districts, in which a fall of coal or stone on the pelvis, or a heavy waggon going over the patient, has resulted in one or other of the following conditions, which I have frequently seen and dissected — either (*a*) a multiple fracture of pelvis, generally of rami of pubis and ischium; or (*b*) a fracture of pubis, with partial separation of sacro-iliac synchondrosis; or (*c*) one or more fractures in vicinity of hip-joint, with separation of pubic symphysis. All varieties are very apt to be followed by a rupture of urethra in some place, as in No. 2, but having the far graver complication, *i.e., that it is caused by and in immediate relation to a fracture of pelvis and a consequent laceration of pelvic fascia.*

Now see what happens in such a case. The patient tries to make water; blood alone comes, or comes first, and he may make a few drops. The doctor tries to relieve him, probably does not succeed, and, with his catheter moving about in a most tantalizing apparent cavity, only drains off the blood and urine effused into the cellular tissue. Next day the perinæum is swollen and black, incisions must be made, and now you have a compound fracture of pelvis, probably more than one, and, almost as bad, you have admitted air into the cavity, full of blood and urine, communicating with the interior of the pelvis. Your incisions will relieve tension and let the blood and urine drain out, but it will be within the experience of every surgeon here that such cases, with all your care, prove very serious and too often die. I read brief notes of a typical one from a very common cause.

John Cullen, æt. 23, residing at Tranent, was admitted to Ward XII., Royal Edinburgh Infirmary, on Mar. 29, 1881, suffering from the effects of an accident received in a pit on the previous day.

History.—Patient's duty in the pit was to stand at the bottom of an incline, to unload trucks of coal coming down, and return them empty. About 12 A.M. the man at the top of the incline allowed a truck to run down without warning Cullen to receive it. This truck struck an empty one behind which Cullen was standing, and before he could get out of the way he was jammed between it and the wall. He was at once picked up, taken home, and seen by Dr Furley of Tranent. The patient complained of an inability to pass water, and after two or three trials the doctor succeeded in drawing off a small quantity of blood-stained urine. Next day he told Cullen's father that the "main-pipe" to the bladder was torn, that the urine was passing through his system, and that he would be better in the Infirmary.

On admission, penis, scrotum, and perinæum were swollen and discoloured, purple in some places, black in others. Patient at once expressed a wish to have his water taken off, and after a few trials a catheter was passed into a cavity, from which a small quantity of blood-stained fluid was drawn off.

The case was puzzling. My house surgeon was not satisfied that the catheter was in the bladder, but left it in and made incisions into the infiltrated tissues, and then sent for me. When I came I found that the catheter was in a cavity between the bladder and rectum, but not in the bladder itself. It could not be passed into the bladder. I therefore incised the perinæum deeply in the middle line, and withdrew the catheter. On incising, a fracture of the os pubis on the right side could be made out. Some urine and blood flowed, but not very freely. The bladder was therefore aspirated, and 20 oz. of apparently normal urine (not blood-stained) taken off. Hot fomentations were put to the perinæum to encourage the flow of urine outwards.

During the night he was very restless, but did not complain of pain. Chloral and bromide of potassium were given very freely, out much effect, till the early morning. The urine never flowed very freely, and once a day, while he lived, the bladder required aspiration. For some days he continued to improve. He was very restless and troublesome at first, but in a few days he became quieter. On the night of the 4th April, while the nurse was attending to another case at the other end of the ward, he made an attempt to get out of bed. He suddenly became very faint, and in a few minutes died, apparently of internal hæmorrhage.

Post-mortem Examination.—There were several incisions in the scrotum, and one two inches long in the perinæum. There were marks of extravasated blood in the iliac and inguinal regions, especially in the left iliac, also on the left buttock, and there was at this part a feeling of some gas under the skin. There was a similar circumscribed extravasation of blood just over the sacrum. On the abdomen being opened a large quantity of blood was found lying behind the peritoneum in its lower two-thirds. The urethra was torn across nearly opposite the triangular ligament, and a large cavity was formed in the perinæum opposite the laceration. The right cartilage of the symphysis pubis was separated from the bone. Right symphysis was totally dislocated and displaced backwards. Round about there was a large amount of extravasated blood, probably due to rupture of the pudic artery. There was a complete separation of the right sacro-iliac synchondrosis, and around it a large amount of recently extravasated blood (probably from injury of the iliac vessels).

Another I saw in consultation not long ago. A powerful, healthy, and temperate young farmer was returning home late on a very frosty night on horseback. His horse was startled, left the road, leapt on to the parapet of a low stone bridge, and fell, with its master still on its back, into the river-bed. He was badly hurt, carried home, passed blood, and no water; had his water drawn off easily enough, and at stated intervals, by his own doctor, Dr Watson of Midcalder. As in a few days he was evidently in high fever and apparently dying, I was sent for.

He was lying on his back, patient and not easily roused, with a jaundiced skin and high pulse and temperature; with frequent rigors, no appetite, and extremely weak; evidently in last stage of septicæmia. The bladder contained a fair amount of urine, which could be readily drawn off. The perinæum and scrotum were dark from bruising, but showed no evidence of infiltration. His left foot was everted, and gave pain on movements. His left thigh, especially the adductor region, was enormously thickened and swollen, and of a brawny hardness. It was obvious what had happened. An extensive and much displaced fracture of the pelvis, specially of left pubic bone, had resulted from fall, and the urinary extravasation which had occurred during his first efforts to pass water had extended, *not into perinæum, and then, as usual,* into scrotum and upon abdomen, but at once from pelvic fascia, through the rents in it caused by fracture, into the deep intermuscular septa of the thigh. I verified this by a deep incision, first through fascia lata, and then, separating adductor muscles with my fingers, got a large quantity of urine, blood, and dead cellular tissue out of the thigh. This relieved tension and gave temporary relief, but was too late to save the poor lad's life. I felt the fractured portion of pubis from my wound.

Now, is there any method by which, in such cases, we can prevent these sad results? I believe there is, if the case is seen early enough, by the enforcement of a very simple, easily remembered rule, *never to allow a single drop of water to pass the sphincter vesicæ into the injured urethra for at least ten days.* If this can be managed,—and I believe it can be done quickly, safely, and pleasantly,—then there is no fear of putrescence of the blood-clot round the fractured pelvis. It remains a simple—is not made into a compound—fracture, the lacerated urethra is given physiological rest, no incisions need be made into its wall, and hence less risk of subsequent stricture will ensue.

How is this to be done?

At once, on recognising the accident, do not allow the patient to try to pass water: he will be glad to escape the pain. Do not work away with a catheter on the injured urethra, but at once tap the bladder above the pubis with the fine needle of the aspirator, pump out the water, and repeat this every eight or twelve hours, according to circumstances, for at least ten days. It is easy, far easier than an ordinary catheterization. It is safe: I have seen it done forty times in a space that a florin would cover, without a bad symptom. It is pleasant: just ask the patient, and he will tell you how much less unpleasant it is than a catheter. It may be said, How is a country doctor to manage it, with all his calls and hard work? Well, to this I answer, It need not be done more frequently than the catheter needs to be passed; and if he cannot do it twice a day, then I would say, tap the bladder per rectum, leave in a Cocks's trocar,—anything better than let any urine into and out of the injured urethra.

The following case is a typically perfect example of what I hope may soon be *the* treatment of such cases:—

T. G., æt. 27, admitted to my Ward XII. on July 8th, 1881, a miner, was lying on his left side in a pit, when three tons of coal fell from roof on his chest and pelvis. He was released at once, sent home, and brought into the Infirmary, which he reached seven hours after the accident. Four ribs were broken, and pelvis was fractured. He had passed no water, and as he required relief, my house-surgeon, Dr Ross, tried to pass a soft catheter and failed, drawing blood only. As he knew it would be nearly an hour before I could see the patient, and the case was urgent, he aspirated the bladder at once, with great relief, and did not allow patient to make any effort to relieve himself. I saw him, and recommended that this should be continued at regular intervals. On eighth day I passed a small flexible catheter, on thirteenth a No. 5 silver, which I tied in for thirty-two hours. After this he passed water himself easily and at proper intervals, and before he went out I could pass a No. 12 easily. The patient had never a single bad symptom, though the case was one of the very worst of the kind I have ever seen.

The rule is a simple one, easily remembered, and the treatment is equally easy. I trust it may commend itself to the members of the Society.

ARTICLE X.—*On Vaccinal Skin-Eruptions.* By GEORGE THIN, M.D. London.

ONE of the most interesting and instructive discussions which took place in the Section for Dermatology, at the meeting of the International Medical Congress in London in August last, followed a paper by Dr Gustav Behrend on Vaccinal Skin-Eruptions. Dr Behrend's position as public vaccinator at Berlin had afforded him unusual facilities for observing these eruptions, and reports of seven cases were given in his paper.

The author divided vaccinal rashes into two classes, suggesting that in the case of the early ones (those which occur during the first three days) the vaccination wound itself might be a factor, whilst the later ones (beginning from the eighth day) were probably due to absorption of certain materials from the developed pustule. The venerable Professor Hardy of Paris, who was present, contributed from his ripe experience a number of facts of much value. He remarked that vaccine eruptions were of three kinds—generalized vaccinia, which, he said, is common; exanthematic eruptions, which occur before the development of the vaccine; and diathetic eruptions (eczema, etc.), often caused by vaccinia after the development of the vaccine pustule.

The power of the vaccine virus to produce general vascular disturbance (which is the interpretation I assign to the power to produce eruptions) was strikingly exemplified by the account of an illness experienced by M. Hardy himself. During the siege of Paris an epidemic of small-pox broke out in the beleaguered city, and M. Hardy, having charge of a small-pox hospital, yielded to the solicitations of his pupils and had himself revaccinated. There followed, in consequence of the vaccination, an outbreak of urticaria (what the subject of it would term, I imagine, a case of diathetic eruption), which not only affected the skin, but attacked the bronchial mucous membrane, producing paroxysms of suffocation which threatened a fatal termination.

All practitioners of any experience must be able to recall cases in which obstinate eczema in infants has first shown itself after vaccination, and other ailments of a general character are probably sometimes produced by the effect of the vaccine virus on the system in delicate persons. During the late epidemic of small-pox in London I had occasion to meet with several cases in which patients attributed a temporary condition of depressed health to revaccination.

During this revaccination period I had occasion to see in consultation a patient whose case may be worth recording as an example of what M. Hardy would call a diathetic vaccinal eruption.

A strong, healthy young woman, aged 25, had been vaccinated in infancy, and had good marks. She was revaccinated on May 6th in three places, and all of these "took." From the fifth to the ninth day there was much inflammation, the redness and swelling involving the whole arm from the shoulder to the elbow. On May 18th two circular marks appeared over the extensor surface of the distal joint of the thumb of the left hand, and on May 20th the eruption had appeared over the knuckles. When I first saw her on May 23rd, I found her suffering from an attack of erythema papulatum on the knuckles, elbows, knees, front of neck, flexor surfaces of the wrists, and *palms;* the eruption being in some parts characterized by so much serous effusion as almost to justify the name *herpes iris* (which is merely a more acute manifestation of erythema papulatum).

The eruption did not differ from that usually found in erythema papulatum, a disease sufficiently common, more especially in spring and autumn, to have come under the notice of most practitioners, and described in all text-books in which skin diseases are described. Although the eruption ran its usual course, in this case it was in one respect exceptional in its distribution. The seat of erythema papulatum is usually on the dorsal surface of the hand, and the palms are spared; the authorities, so far as I have been able to examine them, being unanimous on this point. But in my patient the eruption was freely out on the palms of both hands and on the palmar surface of the fingers.

Hebra (*Hautkrankheiten*, vol. i. page 251) remarks that cases had been observed in which, where the patients had previously suffered from syphilis, an eruption of erythema papulatum had appeared both on the palms and backs of the hands.

The young woman whose case I am relating presented the appearance of vigorous health, and her ordinary medical attendant assures me that there is no room for any suspicion of syphilis.

Whether the exceptional appearance of the eruption on the palms has any connexion with the vaccine virus as a provoking cause it is impossible to say, but its occurrence in this case deserves to be recorded.

M. Hardy remarked, at the meeting of the Congress, that he had observed a gangrenous form of vaccine eruption ending in death, such cases are exceedingly rare. Last year the dead body of an infant which had died of vaccinia gangrænosa was shown at a meeting of the Medical and Chirurgical Society, by Mr Hutchinson. There is yet no data by which such cases can be explained, but that they should occur need not in itself excite so much surprise. The virus produces, at its point of insertion, inflammation and destruction of tissue (cicatrix, to witness), and in its multiplication in the system it is not wonderful that inflammatory effects should be produced at certain points. Where inflammation is produced all grades of destruction of tissue are possible.

Although in the very great majority of cases no troublesome effects on the skin are produced by vaccination, it is desirable that their occasional occurrence should be fully recognised by the profession. The overpowering arguments in favour of vaccination are not weakened by such exceptional cases; and as their occurrence does not escape the notice of the public, the legitimate influence of the medical attendant can only be strengthened by his being able to admit and to explain their existence.

ARTICLE XI.—*Diaphoresis in the Treatment of Blood-Diseases.* By CHARLES F. NAISMITH, L.R.C.P. Edin.

THERE are 2,381,248 sweat-glands, more or less, in the human body. The average quantity of watery vapour excreted in twenty-four hours is two and a half pounds, one-third by the lungs. If this takes place naturally, how much more might be got rid of artificially? The chief function of the sweat is the removal of excess of water, with the dissolved products of animal combustion contained therein. The sweat, like the urine, is easily affected by drugs taken by the mouth, as shown by the administration of turpentine internally, etc. Why, then, should it not be used to throw off poisons which may have got into the blood by absorption through the alimentary canal, lungs, or as a secondary affection?

The skin performs the functions of the kidney, and excretes urea, when the latter organ is disabled. Why, then, should it not be made to increase its own activity where blood-poisoning has occurred? In pyæmia, does not the poison form abscesses all over the body, seeking an outlet and finding none? Why, then, do we not assist it to a means of exit, *i.e.*, the sweat-glands?

In fevers, do we not make use of diuretics and purgatives to stir up those excretories, the kidneys and bowels? But how many of us attempt to stir up the 2,381,248 sudoriparous glands? In the burning heat of fever, does not the production of perspiration cause an equable temperature to the whole body, and do we not view its occurrence in a fever-stricken patient with satisfaction? Yet how many of us attempt to produce it artificially, to rouse up the skin as we do the kidneys and bowels? The treatment of fever by cold applications has descended from Hippocrates, and no one but a fever-patient can appreciate the luxury of it; but there is a far more efficient agent than cold at our disposal, *i.e.*, the vapour bath. The wet sheet packing, or cold in any form, certainly reduces the temperature for the time being; but the vapour bath opens the millions of little apertures on the surface of the body, rousing them up to the fullest exercise of their excretory functions, getting rid not only of effete products of combustion, but other septic influences which may have entered the system, and, in addition to this great antiseptic performance, it lowers the temperature of the body quite as effectually as the application of cold could do. That the sweat does regulate the temperature in a very marked degree is obvious from the fact that it (the sweat) is the great safety-valve of Europeans in the tropics. A well-known writer of the present day has the following:—"The whole subject of body heat, its production, its dispersion, and their disturbances, call for more general attention than they have yet succeeded in attracting;" and he advocates the use of cold or tepid baths.

Jaborandi has been spoken of to produce diaphoresis; but why look to drugs when we have the means at hand in any bedroom? A cane bottom chair, blanket, tin pan, and spirit-lamp, and the requisite apparatus is before you. If the patient is unable to sit up, use Sir J. Y. Simpson's method in bed. There is no need to use the vapour bath to excess, any more than there is to give drugs in excessive doses, discretion being as necessary in the one case as the other. Let us not point at the British Pharmacopœia, saying, What! shall we use such a simple means as diaphoresis, when we possess this mighty armamentarium of drugs? Let us rather call to remembrance the story of Naaman the Syrian and the waters of the Jordan.

ARTICLE XII.—*On a Force capable of Transmission beyond the Body without Sensible Effort (An Analysis of the Involuntary Motions of the Hand,*—continued). By PERCY R. WILDE, M.B.

BY the older philosophers the hand was considered to be a great centre of nervous energy, and capable, under certain conditions (never precisely described) of imparting some amount of animation to objects with which it was in contact. More recently the question of an unknown force has been raised by the "odylism" of Baron von Reichenbach, and the "animal magnetism" of Mesmer. We have also a fictional description of a similar force in the "Vrill power" of Lord Lytton, and, lastly, the "spirit power," which is perhaps the most materialistic conception of all. It follows the view that only by muscular force can humanity affect external objects, so that when motion is produced in these without apparent muscular effort in the living, it ascribes the results to the muscles of the invisible dead. The fact that men in all ages have expressed a belief that there existed a force which could be conveyed from the body to inanimate objects without movement or effort of the limbs, and that they have all placed the upper limb as its conducting medium, appears to indicate that the conception must have had origin in some phenomena not unfrequently noticed. The natural force to which I wish to call attention here affords a simple explanation of some of these, but does not necessarily disprove the existence of other forces, any further than it interprets results previously assigned to their causation.

When we are unable to claim a certain phenomenon as a result of the laws with which we are cognisant, there is a human tendency to forthwith raise it into the region of the supernatural. There it becomes enveloped in the clouds of mysticism. The innate truth gains popular credence for the fiction which surrounds it. Accept it as a mystery, and the figment seems necessary to the fact; bring it to the natural plane, and we either revolt at the delusive hypothesis and miss the fact, or, fathering it upon the only causes with which we are acquainted, give a false interpretation, and so add lustre to the vagaries we would destroy. I take it as an axiom in the examination of such mysteries, that where a certain method of procedure is *essential* to a result, this result lies within the limits of natural facts. The necessity of a certain *modus operandi* is well illustrated in the common experiment of "table-turning." A number of people sit round a table, place their hands upon it, and after a time the table begins to turn.[1] Respecting this motion we have, on the one hand, the assertion of persons incapable of a wilful attempt at deception, that it is the result of no effort of their own; on the other is Faraday's experiment, which proves that the movement is always accompanied by lateral pressure. Dr Carpenter,[2] after describing it, says, "The physicist, therefore, has a right to assert that until a table shall be found to turn without lateral pressure of the hands . . . . there is no evidence whatever of the exertion of any other force than the muscular action of the operators." While this disproves the existence of a "spirit force" as a factor in the operation, it does not explain how it happens that the table moves[3] "without consciousness on the part of the performers that they are exercising any force of their own, but, for the most part, under the full conviction that they do not; and, moreover, as tables thus move which the performers declare themselves unable to move by any voluntary effort, it is not unnatural that they should conclude that some other force than their own muscular action must be put in motion."

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[1] In all the reliable experiments I have myself witnessed or have been informed of, the table moved in a direction from right to left. I stated this experience in a letter to a Spiritualistic newspaper, and asked if it agreed with that of others. The letter excited no reply, and I repeated the question in a private note to the editor. He was good enough to send me a number of tracts upon Spiritualism, but did not answer my question.

[2] *Mesmerism, etc.* Lectures delivered at the London Institution. By Dr Carpenter.

[3] Ibid.

As another example of the necessity of a *certain method of procedure* in order to accomplish the result, I may quote the description of the "body-raising experiment" given by Sir David Brewster.[1]

"One of the most remarkable and inexplicable experiments relative to the strength of the human frame, which you (Sir Walter Scott) have yourself seen and admired, is that in which a heavy man is raised with the greatest facility, when he is lifted up the instant that his own lungs and those of the persons who raise him are inflated with air.

"This experiment was, I believe, first shown in England a few years ago by Major H., who saw it performed at a large party at Venice under the direction of an officer of the American navy. As Major H. performed it more than once in my presence, I shall describe as nearly as possible the method which he prescribed.

"The heaviest person in the party lies down upon two chairs, his legs being supported by the one and his back by the other. Four persons, one at each leg and one at each shoulder, then try to raise him, and they find his dead weight to be very great from the difficulty they experience in supporting him. When he is replaced in the chair, each of the four persons takes hold of the body as before, and the person to be lifted gives two signals by clapping his hands. At the first signal he himself and the four lifters begin to draw a long and full breath, and when the inhalation is completed, or the lungs filled, the second signal is given for raising the person from the chair. To his own surprise and that of his bearers, he rises with the greatest facility, as if he were no heavier than a feather.

"On several occasions I have observed that when one of the bearers performs his part ill by making the inhalation out of time, the part of the body which he tries to raise is left, as it were, behind. As you have repeatedly seen this experiment, and have performed the part both of the load and of the bearer, you can testify how remarkable the effects appear to all parties, and how complete is the conviction, either that the load has been lightened or the bearer strengthened by the prescribed process. . . . . I have not had an opportunity of making any experiments relative to these curious facts; but whether the general effect is an illusion, or the result of known or of new principles, the subject merits a careful investigation."

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[1] *Letters on Natural Magic, addressed to Sir Walter Scott.* By Sir David Brewster, LL.D., F.R.S.

I have never been satisfied with the various theories offered in explanation of this remarkable experiment, but it was only recently that I first perceived how well it illustrated the very principles I had been investigating. I may premise that there is nothing intangible about this power; it is not the chance endowment of certain individuals, nor does it only exhibit itself at spirit circles and drawing-room entertainments. It is not to be expected that nature would produce a thing so unprofitable. It is an honest worker, constantly employed in the human body, while vitality remains, in expanding the chest-walls during the act of respiration.

At each inspiration we use, as Mr Hutchinson has told us, a force equal to about 170 lbs., when we take a long full breath we exert an extra force of about 250 lbs., and yet we are wholly unconscious of its exertion. We can illustrate this very simply, and at the same time use it to affect an object outside the body. Let a person assume the horizontal position, and then on the anterior surface of the thorax place a concave plate of iron weighing say 20 lbs.; the feeling of weight conveyed by the muscular sense is practically nil. The plate is raised with the chest-walls at each inspiration, and in five minutes there will have been about 100 of these upliftings. This represents an increased exertion during that time of 2000 lbs., yet the individual knows nothing of the labour he has accomplished.

One of the feats of strength of the German Eckeberg affords a somewhat similar illustration. "The performer then placed his shoulders upon one chair and his heels upon another; one or two men then stood upon his belly, rising up and down while the performer breathed."

Sir David Brewster, explaining the method by which this feat is accomplished, says, "When the performer supports a man upon his belly, he does it by means of the strong arch formed by his backbone and the bones of legs and thighs. If there were room for them, he could support three or four, or in their stead a great stone, to be broken with one blow."

As a physicist Sir David can hardly be expected to take account of the condition of Eckeberg's viscera when pressed against the spinal column by the weight of one or more men; but it is a little surprising that so accurate an observer, while mentioning the fact that the man moved up and down while the performer breathed, should give an explanation which takes no account of it.

The man does not rest upon the spinal column, but on the muscles of the abdomen, affording an example of the enormous strength of the thin wall which guards the organs of digestion. The weight on the abdomen causes an obstacle to inspiration, and the same force which raised the weight laid upon the chest-wall is called upon to overcome it, and so the man is lifted at each inspiratory effort. If he remained in this position for five minutes the extra exertion used by the performer during that time may be estimated at rather more than 15,000 lbs., and this with comparatively little sensible effort.[1]

The term *epimetric force* may be used to express the result of that extra exertion which the presence of an obstacle to the expansion of the chest-walls excites in the inspiratory muscles. I shall only endeavour to state here the general conditions which render this force capable of being transmitted by the arm so as to affect external objects. These will be better understood if we examine briefly the parts about the shoulder as they appear during certain movements. The idea given by many anatomical descriptions of the shoulder-joint (I hardly think intentionally) is that the scapula forms a fixed fulcrum for the movements of the humerus, except when it is raised above the level of the shoulder. Now if the left hand is placed behind the back so that the thumb rests upon the lower angle of the right scapula, and the right arm is then allowed to swing by the side and then to and fro across the body, it will be found that, although the arm has not been raised to more than an angle of 45° with the body, the scapula partakes in every movement at the joint, gliding by its concave surface over the convexity of the chest-walls, forming an important physiological joint in itself. It is this dual action of fulcrum and lever to which I think insufficient attention has been drawn. If a certain motion is made by the thigh, and the same is repeated by the arm, it is found that the latter act is accomplished with greater dexterity, celerity, and precision. I take the reason of this to be that while the thigh moves upon a fixed fulcrum, in the shoulder-joint the fulcrum is itself moved to that position best suited for the action of the arm in any required position. I think that the physiological position of the scapula is rendered more intelligible by speaking of it as the first bone of the upper or pectoral limb, instead of as a part of the "shoulder-girdle" and the homologue of the bones of the pelvis. Save that it affords a surface for the attachment of muscles, and a fixed fulcrum at certain times for the movements of another bone,—a statement which is equally true of nearly every one of the bones of the extremities,—I see no functional connexion between the scapula and pelvis. I venture to speak of this here because I doubt whether the physiological distinctiveness of these two parts has not been obscured by the constant insistance on their similarity as regards morphological detail. The upper limb is not articulated to the trunk, but attached by the muscles which run from the trunk to the scapula and humerus. These muscles (with the exception, perhaps, of the small omohyoid) are all concerned, directly or indirectly, in the production of movements in the limb. It happens, therefore, that when the arm is at rest these muscles are relaxed. The capsular ligament is

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[1] I have performed the experiment myself, and was surprised at the ease with which a man's weight could be lifted in this manner.

so lax that when, in dissecting, we remove the muscles about the joint, the head of the humerus falls away from the glenoid cavity. When the arm is at rest these muscles are also relaxed. The scapula is now freely movable during the act of respiration, and its movements do not affect the humerus. This is, I believe, a very important reason why the glenoid cavity is so shallow that the term socket seems misapplied, and that the capsular ligament, which in the hip-joint plays an important part in retaining the head of the bone in its socket, is so loose. The real ligaments which bind the scapula to the trunk and the humerus to the scapula are the muscles and their tendons, and it is the relaxation of these during sleep, etc., which prevents the arm being influenced by each respiratory movement. But this lax condition is ill adapted for the great exertions thrown on the limb in supporting weights, etc., and it is necessary to effect a change before we can undertake such efforts. This we do involuntarily by contracting the muscles so that the humerus is brought closer to the scapula, and the scapula to the body.[1] In a thin, muscular individual this is easily observed. He is asked to fix the arm rigidly in a certain position. If the finger is placed on the lower angle of the scapula, we feel, at the moment of contraction, the bone brought in closer contact with it by a movement downwards and backwards. We also observe that the pectoralis major and minor and the serratus magnus on the anterior surface of the chest, and the latissimus dorsi and trapezius, among others, on the posterior surface, as well as those about the shoulder, are put in a state of tension while the arm is fixed.

I may mention that many people, when they wish to obtain great precision for any movement, will draw a long breath, and then keep the chest expanded until the act is completed. Thus, while the scapula and muscles are pressing closer to the trunk, the chest-walls are forced out against them, so that the consolidation between the limb and trunk is rendered still more complete. Of course this fixidity can only be retained during a momentary effort. If, when the arm is contracted, we request the person to take a long, forced inspiration, we find that the scapula remains in contact with the finger during the whole act. If we repeat the experiment when the arm is at rest, we find that the scapula makes a continuous movement in a direction upwards and forwards until the chest is fully expanded. The fixation of the arm necessitates a fixation of the scapula, with tension in the muscles about the chest-walls. The result of this is that a direct obstacle is offered to the free expansion of the thorax during inspiration. Now we know that the vital organs will accommodate themselves to a diminished respiratory movement for a time, and then the extra expansile force is put in motion to overcome the resistance. The method of its application is characteristic, and affords an example of the law of the summation of stimuli. There is a gradual increase of the expansile force at each inspiration, so that at least one of two things must happen: either the opposing muscles must relax, or movement must take place at the point of attachment which is most movable. The two diagrams given here will serve to explain this.

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[1] There is a noticeable diminution in the length of the arm during the contraction.

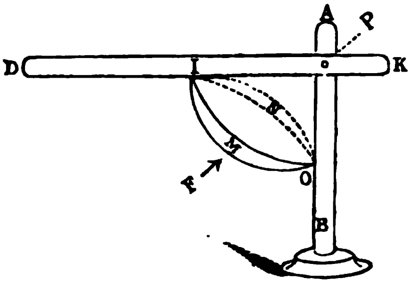

FIG. 1.

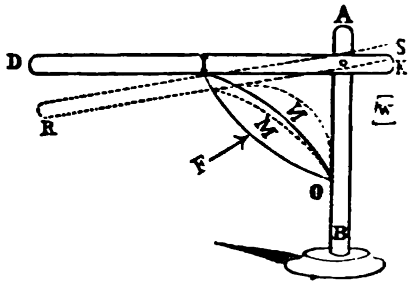

FIG. 2.

The muscle M is attached by one extremity to the fixed upright A B at the point O. By the other it is attached at I to the lever D K, which is movable on a pivot, P.

In Fig. 1 the muscle is relaxed so that the force F causes it to move between its points of attachment and take up the position N.

In Fig. 2 the muscle is tensely stretched between its points of attachment. The force F is acting upon it so as to cause it to take up the position N. This necessitates an approximation of its points of attachment. O being a fixed point, the movement must take place at I, so that the lever D K is moved to the position R S.

W represents antagonistic muscles retaining the lever in the position D K.

Thus the movement is produced by the insensibly exercised force F, instead of by ordinary muscular effort.

When the arm is only slightly fixed, as in the kyrographic experiments, the resistance offered to the expansion of the chest is very slight and easily overcome; but the humerus being brought closer in contact with the scapula by the supra-spinatus, infra-spinatus, and subscapularis muscles, which it is necessary to contract before the arm can be retained in any required position, it is now influenced by the motion of the scapula during the respiratory movements, and so we have produced those involuntary rhythmical movements of the hand which I described in a former paper. It will be seen that the respiratory movements affect the motions of the hand in direct proportion to the amount of muscular effort. I called attention to the fact that the surgeon, in grasping his instrument, used as little muscular effort as possible. To obtain steadiness of hand we must relax the muscles of the arm, and we this by resting the hand on some convenient object, as the table in writing, the mahl-stick in painting, and the patient's forehead in eye operations. Experience has taught us the advantage of this. It is the custom in teaching writing to place the pupil in a certain orthodox position in which he invariably feels constrained and uncomfortable. Outwardly he is all that the writing-master could wish, and yet the pen splutters and runs off the line worse than before. How could it be otherwise when, in order to keep himself in an unaccustomed position, every muscle in the body is in a state of tension. It is possible to keep the hand fixed for a short time, especially if the chest is retained in a state of expansion during the effort; but then comes that impulsive and uncontrollable movement which is shown alike in the child's copy-book and the kyrographic tracings where muscular effort is used to control the involuntary movements.

To observe the effect of an obstacle to the respiratory movements we may place a small weight upon the platform of the kyrograph, so that the indicator encounters it in its course across the field. If we examine the tracing thus procured (No. VI.),[1] we find that inspiration is represented by a vertical line. At the end of inspiration there is a horizontal line at right angles to the other, which represents the amount of movement communicated to the object. This is followed by a vertical line, which represents expiration. We see from this experiment that the moment when the epimetric force is exhibited is at the end of inspiration. This is the exact moment when the chest in expanding encounters the obstacle to further expansion. I for a long time thought that the force was exerted during the whole act, and failed to understand this tracing when it was first obtained. In the body-lifting experiment it is the moment when all the persons engaged have drawn a long breath that the person is raised with so much ease, and it will be seen how beautifully it illustrates the method by which the epimetric force can be utilized to assist the voluntary muscles in great efforts. There is something marvellous about this mechanism by which we can by an act of the will bring the arm into communication with a great force, and so accomplish feats otherwise impossible, and then, when we require only precision and dexterity of movement, to be able to break off the connexion, as it were, and leave the hand free to the action of its own proper muscles.

In table-turning we have the combined epimetric force of several persons all acting in the same direction. The hand is at first placed lightly on the table, and there is but little contraction of the muscles; but as the effort is continued a greater degree of tension takes place in order to keep the hand fixed in the required position. The moment when the table begins to move is dependent upon the amount of resistance offered to the expansion of the chest by the several persons. When this excites a force greater than the weight and friction of the table, either it must move or the muscles of the individuals must relax.

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[1] *Edinburgh Medical Journal*, October 1881.

If the fingers are placed lightly on a table, and a weight placed on each side of them, it will be found that the hand will gradually approach the one on the right side (the reason that this is the almost invariable direction involves another class of facts which I hope to consider in a future paper). The hand at length touches the weight, and at each succeeding inspiration is brought into closer contact with it. This is continued for some time, according to the resistance to be overcome, and then movement takes place, the weight appearing to offer no resistance to the fingers, but to "walk itself off," if I may use the expression, as if it had been endowed with some temporary vitality by its contact with the hand, and I can well understand the philosopher's conception that this must actually be the case.

(*To be continued.*)

Part Second.

REVIEWS.

On Anchylosis. By BERNARD E. BRODHURST, F.R.C.S. London: J. & A. Churchill: 1881.

SURGEONS will naturally desire to know most what Mr Brodhurst has to say about treatment. Of course, as an orthopædic, he has most to say on fibrous anchylosis. His treatment is twofold—"*1st*, Gradual extension of the limb, with or without tenotomy; and *2nd*, Immediate flexion of the limb, with or without tenotomy, and subsequent extension." The latter of these methods is the favourite with Mr Brodhurst.

The points of special importance are as follows:—*1st*, Complete anæsthesia; *2nd*, Division, subcutaneously, of tense tendons, fasciæ, or cicatrices; *3rd*, That the punctures should be allowed to heal, otherwise they "may be extended into gaping wounds;" *4th*, Only moderate force should be used, and always, *5th*, in the direction of flexion, as thus "injury cannot possibly accrue to vessels or muscles or other structures, neither can dislocation occur when this is observed;" *6th*, Subsequent attempts to restore the limb to its proper position should be deferred till all tenderness has left the joint. For this purpose a splint should be applied which has been moulded to the limb before the operation.

For bony anchylosis the recommendation for operation is to divide the bone which has assumed the distorted position as near the articulation as possible. With this we cannot agree, especially in the case of the hip (the joint mostly referred to), for we consider that section through the neck of the femur is in many cases neither easy nor desirable. We disagree with Mr

Brodhurst, also, in regard to the advisability of establishing a movable (false) joint in this neighbourhood. He seems to consider that an anchylosed joint (even in a favourable position) is never satisfactory except in the case of the shoulder, elbow, and ankle (p. 82). Here, again, we beg to differ, for in the case of the elbow, perhaps before all other joints, we think that operation (by resection) is most appropriate and most successful, and that an anchylosed joint need never be permitted.

We are somewhat astonished at Mr Brodhurst's remarks upon anchylosis of the jaw. These remarks are scattered in a somewhat disjointed way through the book. Among them we can find no reference to Esmarch's operation for producing a false joint by removal of a portion of bone. The procedures recommended are forcible gradual stretching, or division of the masseter. In bony anchylosis division of the ramus of the jaw at the sigmoid notch is recommended, Professor Rizzoli's operation being merely referred to in the last paragraph of the book, as if it had been stuck on as an afterthought. Some cases of anchylosis of the jaw are recorded which are not by any means satisfactory as to their results.

This book of 100 pages is not uninteresting to read, and contains a considerable amount of information. It might, however, be much improved. There is a great amount of repetition, even cases being reproduced. One case is recorded at length and occupies nearly three pages, and is reproduced as if new to occupy a whole page again.

Aspiration of the Knee-Joint. By HENRY O. MARCY, A.M., M.D. Cambridge, Mass., U.S.A.: 1880.

IN this pamphlet Dr Marcy gives an account of seventy successful cases of aspiration of the knee-joint for syphilitic, gonorrhœal, rheumatic, traumatic, septic, acute and chronic inflammatory effusion. These cases occurred in his own practice or were reported to him by other surgeons in answer to a circular which he issued. He considers that "the conditions under which surgeons have feared to operate are those very ones where the most brilliant and satisfactory results have been obtained, namely, in acute inflammatory and traumatic cases." His deductions are:—"Operate early; re-aspirate as often as the fluid accumulates; aid by rest, compression, and fixation of the joint." The principal objects of the treatment are, to relieve pain and tension, and to prevent the bad results that are liable to occur from injury to the synovial membrane, cartilage, bone, and especially ligaments of the joint, from the presence of fluid and the distention which it causes.

The Treatment of Hip-Disease. By E. H. BRADFORD, M.D. Cambridge, U.S.A.: 1880.

THIS pamphlet is written in a common-sense manner that recommends itself. The main conclusion to which the writer comes is that "the treatment of hip-disease should be based neither upon any one method nor upon the use of any splint." The methods employed by Dr Bradford were, American extension, Thomas's splint, and Hutchinson's method. He found each succeed in certain suitable cases, and all fail in some other cases. Consequently he came to the above wise conclusion, and, without rejecting any of these methods, did not adhere rigidly to any of them.

We recommend the pamphlet to practical surgeons.

The Treatment of Spinal Curvature and Abscess by Inflation. By J. HOLDEN WEBB, M.R.C.S., etc. Melbourne: Stillwell & Co.: 1880.

THIS is not an account of the treatment of spinal curvature by inflation, as the title would lead us to suppose, but by suspension. The suspension is obtained, not by a tripod, as in Mr Sayre's method, but by a cross-bar fastened to the roof in such a manner as to enable the patient to walk or jump round in a circle. Mr Webb's method of treatment differs from Mr Sayre's mainly in this, that he suspends his patients not merely till a jacket is fitted on, but for hours and days. It is only in children, however, that this suspension by chin and occiput can be carried out, as their comparative light weight, we are told, removes all danger. Mr Webb gives a few cases in which not only was curvature cured, but the process was apparently quite agreeable to the little patients.

We cannot for ourselves see how such a method of treatment could be carried out unless in a special institution or gymnasium constructed for the purpose. Mr Webb has not mentioned, as far as we have seen, how or where he constructed his cross-beam balance for the treatment of his patients.

The most original part of this paper is the application of inflation in the treatment of abscesses which have become septic. Mr Webb instances cases of psoas abscesses which had become septic, and which were made aseptic by forcible inflation with air which was rendered antiseptic by passing through "warm carbolic acid." He experimented first on a dog, and, finding it none the worse of having its subcutaneous cellular tissue distended with this antiseptic air, proceeded to operate on human subjects, who seem to have been marvellously benefited. Mr Webb's idea is that air will pass more
ly into all the corners and crevices of an abscess better than
n would, and will more thoroughly expel and disinfect

any noxious gases that may be present. We have seen the attempt to render a putrid abscess sweet so often made unsuccessfully, that we are glad to hear of any means by which the septic condition may be overcome. We would recommend Mr Webb's plan to the consideration of all hospital surgeons. The apparatus is simple enough: a Florence flask half filled with crystalline carbolic acid, a tight-fitting cork with two glass tubes bent at right angles, one passing merely into the flask, the other to the bottom. To the longer tube the indiarubber pump of a spray apparatus is attached, and a spirit-lamp placed below the flask.

The Operative Treatment of Cleft Palate in Children. By HENRY G. RAWDON, M.D., Liverpool.

IN this pamphlet we get the result of Dr Rawdon's experience at the Liverpool Infirmary for Children. He dwells chiefly on the period at which an operation may be attempted, and the order in which the parts affected (in complete cleft) should be operated on. On the first point he says, "Probably the best age at which to operate is between the third and fourth years," after the first dentition is over, and "before the child has learned to talk (this faculty is acquired later than usual in such children)."

On the second point Dr Rawdon considers that the soft palate should be united first, then the hare-lip if it exists, and lastly, some months after, the hard palate. He says, "Once the velum is closed, the subsequent operation on the hard palate becomes easier of accomplishment. As time goes on the cured soft palate" (and lip) "has a remarkable action in diminishing the width of the fissure in the hard."

For sutures Dr Rawdon prefers silver wire and horse-hair. He considers tepid liquids as preferable to the iced drinks usually given, the former causing less irritation.

On the Removal of the Entire Tongue. By EDWARD LUND, F.R.C.S. Manchester: J. E. Cornish: 1880.

IN this pamphlet Mr Lund describes the method practised by Mr Whitehead of Manchester. The steps of the operation are simply these:—All the cutting is done with blunt-pointed scissors, the cuts are made slowly and deliberately on alternate sides, and hæmorrhage is dealt with as the operator meets with it.

Mr Lund advocates the removal of the whole tongue, in all cases of cancerous growth, as preferable to partial operations. He considers that articulation is better, as well as the risk of return less.

The operation seems a good one, and devoid of some of the risks of Syme's method of procedure.

A Practical Treatise on Hernia. By JOSEPH H. WARREN, M.D. Second and Revised Edition. Boston: James R. Osgood & Co.: 1881.

THE first edition of this work was fully noticed in our columns (vol. xxvi. p. 1024). This new edition is greatly altered, enlarged, and improved. The most important part is still the description of the author's method of injecting an astringent solution to induce closure of the rings and canals in hernia, and thus to obtain a radical cure.

With a good deal of quiet self-glorification, there is a carefulness to recite what has been done by others, and fulness of bibliographical detail, which make the book quite essential to any one meaning to teach or practise the operation for curing reducible herniæ.

Hernia in Children: based on a Study of 500 *Cases.* By EDWARD SWASEY, M.D. New York: William Wood & Co.: 1880.

IN this pamphlet there is a great deal of information, chiefly statistical, of which the following constitute some of the most interesting points.

In children, femoral hernia is almost unknown. Dr Swasey attributes this to the small space existing in infants between Poupart's ligament and the osseous structures behind. One remarkable case is recorded of a boy of sixteen with double femoral hernia.

Males are much more liable to hernia (especially inguinal) than females, owing to the ready passage offered by the tunica vaginalis and the descent of the testis.

The right side is much more frequently affected than the left, due (Dr Swasey considers) to the large size and weight of the liver, which, in coughing, crying, etc., presses down over the right inguinal opening.

In regard to treatment Dr Swasey speaks strongly in favour of the early application of a truss or (if that cannot be borne) a pad and elastic bandage. He considers that hernia in infants is easily cured if kept up by a proper apparatus; that if left to itself it never heals, but tends to get worse from the constant descent of the bowel enlarging the opening; and that after the first few months of life the hernia is much more difficult to cure. In congenital hernia the neck of the tunica vaginalis tends to close, and a little pressure will promote and accomplish the closure. But the presence of a hernia in the canal will materially alter this tendency, and make the process of cure a much longer one.

A very remarkable case is recorded of strangulated hernia in a child six months old.

Lectures on the Physical Examination of the Mouth and Throat; with an Appendix of Cases. By G. V. POORE, M.D., F.R.C.P. (London), Professor of Medical Jurisprudence. London: J. E. Adlard: 1881.

THESE very innocent and somewhat juvenile lectures, as we are told in the preface, were originally written for the benefit of students attending the junior class of clinical medicine at University College.

If they were written, they were probably read, and we cannot help feeling that it would have been much more interesting to the junior class had the instruction been delivered in a less formal manner, without the paper, and with abundant living texts. The matter of the lectures is just the scrappy practical sort of teaching that a good house surgeon or assistant physician should give orally in the out-patient department of the medical side of the hospital. Some of it would also come in well in the surgical out-patient clinique; but it is the sort of information which given over a case is instructive, given as a systematic lecture is wearisome and hard to remember.

Lectures on the Parasitic Diseases of the Skin, Vegetoid and Animal. By JAMES STARTIN, Surgeon and Joint Lecturer to St John's Hospital for Diseases of the Skin, Leicester Square, London. London: H. K. Lewis: 1881.

THE duty of a reviewer is not always a pleasant one. So long as the book to be commented on is fairly good, even if, as the work of a tyro in medicine, should it exhibit but here and there some faint indications of genius, of industry, or of capacity for observation, the critic may, without hurting his conscience, indulge in a little praise, which may stimulate to further and more valuable efforts. But even in these days there is a point beyond which one cannot go in justice to the book-buying public. What can have induced Mr James Startin to print these so-called lectures on parasitic skin diseases we are utterly at a loss to conjecture, unless it be to see his name on the title-page of a volume. The rules of grammar, of spelling, or of consistency are set at defiance on nearly every page. One sentence begins and never ends. Another starts in the plural number or is singular when it terminates. Some statements are barely correct, others are contradictory, and others, again, unintelligible. We hope that the work which he tells us he has in preparation will exhibit a better acquaintance with grammar, spelling, and the elements of punctuation than that which has been sent us for an opinion as to its contents.

The Venereal Diseases, including Stricture of the Male Urethra. By E. S. Keyes, A.M., M.D. New York: William Wood & Co.: 1880.

The aim of this work is to place the subject as clearly as possible before the general practitioner, and avoiding such moot points as might lead to confusion. The author has certainly succeeded admirably in his task, and has produced a practical treatise of the utmost value. We have rarely seen the vast subject of venereal disease handled with as much brevity and clearness. Dr Keyes believes, like most of his countrymen, that there is no pathological connexion between the hard and the soft chancre, a view we endorse. When speaking of stricture of the urethra, he condemns the too common practice of late years of free cutting in the treatment of this disease; and especially warns the young surgeon against believing the theory "that every natural undulation in the tissues of the pendulous urethra is a stricture fit for cutting." He pays a deserved tribute to the late Dr Otis, but does not hesitate to point out the dangers of his method of treating stricture.

The volume is largely illustrated by woodcuts, designed after photographs from nature, which give as true a notion of syphilitic appearances as is possible without the aid of colour.

In short, we can recommend this as one of the best of the many good books on this subject which come to us from America.

Army Medical Department Report for the Year 1879. Vol. XXI. London: 1881.

This Report is full of information about the health of our troops in various climates, but, like most books bound in blue paper, it is not very attractive reading to one not compiling statistics or studying etiology. The most readable bit is Surgeon-Major T. A. Woolfryes's account of the war in Zululand, not at all a glorious chapter in our history, and scarcely to be looked for in a medical report. There is also, in the appendix, a report on hygiene by Surgeon-Major F. de Chaumont, and a table of meteorological observations at foreign stations.

To quote from the text, "The average annual strength of the troops serving at home and abroad in 1879, as computed from the returns received by the Army Medical Department, was 164,642 non-commissioned officers and men (exclusive of the Royal Malta Fencible Artillery, the 1st and 2nd West India Regiments, and the Gun Lascars at Ceylon, and at Hong-Kong, corps which are not recruited at home); the admissions into hospital in this force were 192,483, and the deaths 3367. The rates represented by these numbers are for admissions into hospital 1169·1, and for deaths 20·00 per 1000 of the average annual strength, the latter being calculated on a strength of 168,322, which includes detached men."

The military surgeons had better turn their attention to what is the fittest form of shoe for the march. This question is prominently brought forward in the report of Deputy Surgeon-General T. A. Hanbury in his Medical Diary of Robert's Field Force in the celebrated march from Cabul to Candahar.

"Probably," he writes, "a worse shod army never took the field. The ammunition boot, made of raw material and of very indifferent workmanship, loses shape and turns over at the heels on one side or the other after a few days' hard marching, and simply impedes progress. The Native shoe, with its wide open mouth and narrow pointed toes, seems ingeniously contrived to cripple and blister.

"The little Goorkha, who is very fond of the British soldier, invariably adopts the ammunition boot, but as his foot occupies about half the boot, I do not think he is a gainer by the transaction. The subject of boots deserves serious attention."

One-half the inefficiency was caused by blistering in the feet. Dr Hanbury thinks that, taken all round, the wide-soled ammunition boot is best adapted for both European and Native troops, but the material and workmanship must be improved, and decided attention to fitting is demanded.

The following passage exhibits some evidence as to the working of an enactment which has been the cause of much controversy:—

"For the four years (1860-63) preceding that in which the first Contagious Diseases Act was passed, the average rate of prevalence of primary venereal sores at a group of stations, each of which was successively placed under the Act, is 130, and that for gonorrhœa is 135 per 1000 of the strength. At another group of 14 stations (originally selected for comparison because at the time the stations comprised in it were large ones, that is, had not less than 500 men) the rate of prevalence of primary venereal sores is 116, and that for gonorrhœa is 129 per 1000 of the strength.

"In the next period shown (1864-69) the Act was applied successively at each of the stations in the subjected group; in 1865 it was in operation at three stations, in 1866 at four, in 1867 at five, in 1868 at eight, in 1869 at ten, in 1870 it was in operation at all the 14 stations. During this period the average rate of prevalence of primary venereal sores fell to 87 per 1000 of the strength, in the subjected group; in the contrasted group of large stations it fell to 108 per 1000 of the strength. The result, therefore, is that the subjected group of stations, which before the application of the Act had a rate of prevalence 14 per 1000 higher than the unsubjected group, for the period of its partial application has a rate of prevalence 21 per 1000 lower than that of the unsubjected group.

"In the third period shown (1870-79) the Act was in force for the whole time at every one of the stations in the subjected group, and the average rate of prevalence of the disease fell to 44 per 1000 men, an average rate identical with that for the period 1870 to 1878; at the unsubjected group the rate fell to 101 per 1000 men, an average rate identical with that for the period from 1870 to 1878.

"The rate of prevalence of gonorrhœa in the first years of the application of the Act did not materially differ in the two groups of stations; in the last years, however, the results are favourable for the subjected group, the rate of which in 1879 is nearly a third lower than that of the unsubjected one."

It would be comparatively easy if such a question could be decided on medical grounds alone. There are people who are so far from agreeing that surgeons should be paid to examine prostitutes and treat their diseases, that they hold that prostitution should be made punishable by law. We never could see any valid reason why medical men should leave the standpoint which they have for the most part steadily held. They do their best to heal or alleviate venereal disease, leaving to their patients the responsibility of the conduct through which the disease has been incurred. A man who knows what life really is will probably arrive at the conclusion that although it were very desirable all men should restrain their desires till they can afford to get married, or, if they can never afford to do so, that they should reconcile themselves to the limitations of morality; still, looking at the world as it is, there is no doubt whatever that these restrictions will be disregarded in numerous instances. Soldiers are, save in a certain percentage, not even allowed to get married, and considering the loss the Government undergoes from their being rendered incapable for service from syphilis and gonorrhœa, it is not to be wondered at that military surgeons are anxious to do something for their prevention, especially as of all contagious diseases they are the most easily preventible. What could be done to save the civil population is too wide a question to be treated here. Much could, we think, be effected by teaching the preventive value of cleanliness, by making prostitutes reside in particular quarters, and preventing them straying about the streets. This we know can be done, for it has been done; but all attempts to smother prostitution by police enactments are sure to fail as they have failed heretofore, and must in several ways greatly help to foster contagion and to increase the other attendant mischiefs.

Health-Resorts for Tropical Invalids in India, at Home, and Abroad. By W. J. MOORE, L.R.C.P.E., etc. London: J. & A. Churchill: 1881.

The Ocean as a Health-Resort. By WILLIAM S. WILSON, L.R.P.C., M.R.C.S.E., etc. Second Edition. London: J. & A. Churchill: 1881.

THESE are two useful books in more senses than one. The former was intended, the author tells us, for insertion in a manual of family medicine for India, but was omitted therefrom on account of its tendency to occupy too much space. We think he has done wisely in issuing the work as a separate volume, and we are convinced that not merely practitioners in the tropics, but medical men at home, will, if occasion demands, profit by the advice and experience which the author brings to his task. Mr Moore writes in a highly interesting fashion on the health-resorts of India; and his chapter on "Tropical Marine Sanitaria," though short, is suggestive. There is a good summary of British and Foreign health-resorts, in which not merely the Indian resident seeking home-change, but the ordinary British valetudinarian, will find much useful information. Our author's remarks are necessarily short and to the point; but here and there he scarcely does full justice to some of our British resorts. His description of Southport may be mentioned as one which hardly does justice to that salubrious Lancashire watering-place.

Mr Wilson's book is written in an infinitely more popular style than the foregoing work; but it is hardly to be the more commended on that account. There exists in his book a vast deal of popular natural history and "padding," which are decidedly out of place in a manual devoted to the description of sea-voyaging in a medical aspect. Mr Wilson evidently intends that his book should serve as a kind of vade-mecum to the voyager, since he includes therein information of the most varied nature, and such as a traveller would seek and find better detailed in special manuals. His chapter on "Objects of Interest at Sea," for example, will, we make bold to say, be far better summarized in the chats with the ship's officers or with fellow-voyagers. People who wish to know something about marine zoology are likely to provide themselves with works of authority thereon. Again, the chapter on "The Meteorology of the Ocean" is much too short and elementary to afford reliable information on a topic of very wide and debateable nature. When Mr Wilson confines himself to practical directions to the traveller who leaves his native shores for the first time, he writes both intelligently and in a graphic manner. His advice and practical experience together form a valuable feature of the volume under notice; and we should on this ground alone recommend his book as a handy companion to the health-seeker meditating travelling by sea. A preliminary perusal of these two books will form a wise preparation for all ocean travellers, whether in search of health or not.

Drugs that Enslave. By H. H. KANE, M.D. Philadelphia: Presley Blakiston: 1881.

DR KANE deals mainly with what he terms the opium, chloral, and hashisch habits, referring to alcohol only incidentally.

The writing is sometimes rather American in its peculiarity, but, on the whole, is a powerful and, as far as we have seen, a truthful account of the dangerous, ensnaring, and terrible results of narcotic indulgence. We have marked many passages for quotation or remark, of which the following are specimens.

In describing how people often fall into the use of morphia, Dr Kane says (p. 18), "Finding pain, nervousness, and hysteria constantly claiming his attention, and that nothing relieves them so well as opium or its alkaloid morphia, the physician resorts to their use more and more freely, expecting, as soon as the more distressing symptoms pass away, to pursue another and more permanent plan of treatment. The patient, however, having once experienced relief, insists upon the further use of the drug, sometimes feigns illness in order to procure it, finally obtains some herself, and in guilty secrecy drifts rapidly into the habit."

This, we fear, is but too true a picture of what often happens.

"Those not acquainted with the truth in this matter will be surprised to learn that there are to-day thousands of educated and respectable people in all countries, and among all classes, confirmed *habitués*,—slaves to a habit that is more exacting than the hardest taskmaster, that they loathe beyond all else, and yet that binds them in chains that they are wholly unable to break. They do not continue its use because it gives them pleasure, but simply because it is the only thing that in increasing doses can save them from the torment it has itself imposed, because without it they are sunk into a living hell" (p. 19). This also is faithful painting, and, whilst it is sadly true of morphia indulgence, is but a tithe of the fearful abyss of misery, crime, and sin that is constantly surrounding us in every community, the offspring of indulgence in alcohol. The deeper gravity of the latter condition is well brought out by the following statement, which is, we believe, true:—"A short struggle of from four to eight days will, in the majority of instances, cure the opium patient, while with alcohol or hashisch, less so with chloral, the desire seems to be latent, and to crop out at odd times and under peculiar circumstances" (p. 206). It is well known how long a time it takes—generally years of strict abstinence—to cure the appetite for alcohol.

In regard to treatment, we are told that chloral, like alcohol, may be, and ought to be, stopped at once; but when opium or morphia is the drug indulged in, a sudden and complete stoppage is dangerous, being apt to bring on diarrhœa, delirium, etc.—the plans recommended being a somewhat gradual reduction by one-half or one-third, extended over a few weeks, till the drug is wholly discontinued, or a sudden stoppage, with occasional small quantities administered when the symptoms produced by the stoppage seem to be going too far. A cure can never be looked for in the patient's home, where friends are sure to interfere. It can only be accomplished by total abstinence, and can be maintained only by total abstinence, resembling in these respects the treatment of those who have come under the influence of that other poison, alcohol.

We have thus given, in a few extracts, an outline of the book, which is a valuable work, and in itself well worth reading.

In conclusion, we would join with Dr Kane in protesting against the ready manner in which some periodicals admit advertisements of quack drugs, which generally contain narcotics in them, and thus tend to foster the habit of indulgence which is a growing one in all countries.

John Hunter and his Pupils. By S. D. Gross, M.D., LL.D., D.C.L. Oxon., LL.D. Cantab., etc. Philadelphia: Presley Blakiston: 1881.

Professor Gross has favoured us with the best notice of the great Hunter that we have ever seen. The book, which has a fine copy of Sir Joshua Reynolds's celebrated portrait as its frontispiece, is well written, and thoroughly deserves a place in every medical library.

No extracts could give an adequate idea of the fluent style and interesting manner in which one is carried on from the earliest days of John Hunter to the magnificent results of his life and labours.

The Young Doctor's Future; or, What shall be my Practice? By E. Diver, M.D. London: Smith, Elder, & Co: 1881.

This little book contains a great deal of useful information and sound advice. The young graduate who is at a loss what to do for a few months or years, or where to settle down, will find half an hour well spent in looking through Dr Diver's facts and hints. There is a large amount of space devoted to information about the various public services.

Guide to Students, 1881-82. Edinburgh: E. & S. Livingstone.

We have received a copy of Messrs E. & S. Livingstone's *Guide to Students*. As far as we have examined we have found it correct; and as it is full of most useful information, it ought to be a most valuable work of reference for the medical student.

Medical Societies: their Organization, and the Nature of their Work. By J. Collins Warren, M.D. An Address delivered at the Centennial Meeting of the Massachusetts Medical Society, June 8th, 1881. Cambridge: Printed at the Riverside Press.

This is a valuable and interesting history of the progress of medical organization in America. It traces the great progress which has been made since the time, little more than a century ago, when the aspiring young men in America had to cross the Atlantic for a degree, until now, when almost every state possesses its own well-equipped schools and colleges. Those who take a special interest in the subject will be enabled, by a careful perusal of this paper, with its numerous notes and references, to realize the similar course which must have been passed through by the still older and more venerable institutions of our own country.

We draw attention—and our space forbids us doing more—to a topic which ought to interest British practitioners, who, like most classes of society, are daily discovering links of close affinity with the great English-speaking republic of the West.

New England Medical Monthly. William C. Wile, M.D., Editor and Proprietor. 2 dollars per annum in advance. Vol. I. No. 1. Newton, Conn.: Oct. 15, 1881.

This is the first number of one of the cheapest medical journals we have ever seen. If its successive numbers are equal in amount and character of contents to this its first number, it should obtain the success it deserves. The editor means it to live. In a clever address he appeals to his Connecticut friends "to give us a helping hand in our infancy, and we will try and do you honour in our old age."

It is a fifty page, double-column journal, on good paper, and with clear type.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXI.—MEETING I.

Wednesday, 2nd November 1881.—Dr P. H. WATSON, *President, in the Chair.*

I. *Dr Coldstream* showed the TRACHEA and LARYNX of a child on whom he had operated the previous week. The patient was a little boy æt. 4, suffering from well-marked diphtheria. Patches on tonsil and uvula were to be seen from the mouth. When the doctor first saw him he was in a state of suffocation. The operation was performed at once with great relief. The patient survived three days, dying ultimately of blood-poisoning. In the preparation the œsophagus was dissected off and the trachea slit open posteriorly. In the front wall the tracheotomy wound was well seen, and below it a piece of false membrane. This piece of membrane made a complete circle round the trachea, and extended down as far as the bifurcation.

II. *Mr Joseph Bell* showed (1) a LOOSE CARTILAGE removed from the knee-joint of a Danish sailor the previous day. He ventured to bring it before the Society in order to mention the method adopted to fix the body for operation. The patient had had a smart attack of synovitis. When it went down the loose body was discovered, but it was so mobile that the attempts made to catch it were very often futile. To prevent it slipping into the interior of the joint the very simple plan of transfixing it by means of a long carbolized straight needle was adopted. It was thus kept in position on the inner side of the joint, and there cut down on. The operation was done under strict antiseptic precautions, and, so far, the patient was doing extremely well. He also showed (2) an interesting CAST taken from a case of very great rarity. He had been asked to see a young man suffering from an injury to his shoulder. With the patient there was an old gentleman who, Mr Bell noticed, had a deformed hand, of which he was a little ashamed, for he endeavoured as well as he could to conceal it. With a little persuasion he got him to submit to having a cast taken, and it was now before them. It showed the right hand dislocated towards the radial side, the lower end of the ulna projecting about half way along the ulnar side of the metacarpus, and the radial side of the forearm, especially in its lower half, greatly shrunken. The hand had been injured some four years previously, and seemed to have been treated by a bone-setter. So far as could be made out the injury appeared to have been a Colles' fracture slightly higher up than usual. The upper portion of the radius was very much wasted, and passed off into quite a thin piece of bone, attached to the lower fragment only by membrane. The Italian who took the cast had bulged the muscles too much to the radial side, giving a somewhat incorrect impression. A leathern case was being made for the arm, which it was hoped would support it and allow the tendons (flexor and extensor) to act on the fingers rather than on the hand, as they did at present.

III. *Dr James Carmichael* exhibited several TUMOURS, ranging in size from a pea to a bean, removed from the brain of a little boy aged 2½ years. The patient was brought to the Royal Hospital for Sick Children, suffering from vomiting of an intermittent character. This subsequently, after a few weeks' treatment, disappeared altogether, and did not recur. The child was very much wasted, and the emaciation progressively increased until its death about five months after. An examination of the child was attended by negative results as regards the detection of any physical signs of disease of internal organs; and although the case was under continuous and careful observation until the time of the child's death, nothing of a positive nature in regard to the evidence of disease could be made out. The previous history of the case, however, seemed to give a clue to the cause of the steady wasting which was going on. It appeared that the child was quite healthy until the age of eighteen months, when, along with the other children in the family, he suffered from an attack of measles, and had never enjoyed good health thereafter. I was therefore led to form the opinion that the child suffered from hyperplasia followed by caseation of the tracheo-bronchial glands, as a sequela of measles, and this succeeded by tuberculosis. The correctness of the diagnosis was verified by the child ultimately showing symptoms of meningitis, which proved fatal on the fifth day. On post-mortem examination the bronchial glands were found caseous, and a few of the mesenteric glands were in a similar condition; there was also tubercle in the lungs, liver, and peritoneum. The brain was carefully examined, and it was found that the subarachnoid space was œdematous, the ventricles filled with fluid, and abundant sero-purulent lymph was seen at the base, filling up the interpeduncular space and its neighbourhood. In addition, the tumours now exhibited were found embedded in the gray substance of the hemispheres. They were altogether nine in number, five on the right side, in the ascending frontal and parietal lobes, two in the occipital lobe, on the left side, and two on the right occipital lobe, closely adherent to the dura mater (tentorium) of the cerebellum. The tumours appeared to originate from or follow the course of the vessels of the pia mater. They lay quite isolated and circumscribed in the gray substance.

On examination they were of roundish form and firm consistence, and, on section, commencing softening in the centre could be seen. Microscopically, they presented all the characteristic appearances of tubercle, with numerous giant cells scattered throughout.

IV. *Mr Joseph Bell* read his NOTE ON THE TREATMENT OF RUPTURED URETHRA, which appears at page 518 of this Journal.

Mr Duncan said the paper was not one lending itself easily to criticism. It was a subject on which they must all have felt they had some experience in reference to the disastrous results that so often occurred. Those cases to which Mr Bell more particularly referred—fracture of the pelvis accompanied by rupture of the urethra—were by no means rare. They were not all necessarily followed by extravasation of urine. Within the last year he had had two cases under his care in the Infirmary in which there was undoubted fracture of the pelvis with rupture of the urethra, and in neither did extravasation of urine occur. When it was necessary to make an incision into the perineum, he agreed with Mr Bell that the case often ended disastrously; but if the urine could be drawn off for a short time, usually two or three days, in his experience then the case goes on well. In cases where the catheter could not be passed he thought the treatment recommended by Mr Bell was admirable. Aspiration gave a chance of keeping the urine in its aseptic condition. It was well worth an extended trial. They must, however, take care to see that the aspirator was thoroughly clean. This was a point perhaps not sufficiently attended to. A case occurred to him the other day in which he had to aspirate a highly septic abdomen connected with a gangrenous condition. He then proceeded to the next ward, telling the dresser to bring the aspirator, after it was cleaned, for use in a case of abscess connected with the hip. This abscess had been aspirated twice previously with very good effects, but after the third aspiration the temperature rose, and bacteria and micrococci appeared in the pus. An incision brought the temperature down; but the non-success of the third aspiration was due to the fact that the aspirator had only been superficially cleaned.

Dr Cotterill wished to ask Mr Bell one or two questions. He wished to know if he was correct in understanding him to say that rupture of the pelvic fascia was not commonly met with except in cases where there was fracture of the pelvic bones. He thought it was sometimes the case that the deep pelvic fascia was ruptured without fracture. He would also ask if it was right to take for granted that the patient had not passed water in those cases where Mr Bell recommended aspiration. There was a great shock to the system at the moment of the accident, and in a state of shock the patient often passed water unconsciously. If he did so, there was, in all probability, extravasation of urine, and he would ask if it was fair that the patient should be allowed to die of pyæmia from the extensive sloughing of tissues that would take place where no incision was made.

Mr Duncan remarked that it was an interesting point to consider whether a small extravasation of urine would do any harm. His own impression was that it would not, unless it became septic. It was undoubtedly a chemical irritant, but it was when it became decomposed that the most aggravated cases of sloughing occurred.

Mr Symington would like to know Mr Bell's opinion as to the position where rupture most commonly occurred in patients falling on joists, etc. Few of the text-books were precise on this point. He had not much practical experience of these cases, but he remembered one which occurred to him when he was a house-surgeon, in which he passed a catheter with the result of drawing off a large quantity of blood from a cavity which extended a long way up between the bladder and rectum. In the majority of cases where the patient fell on a joist, he was of opinion, from his anatomical investigations, that the rupture occurred in the bulbous, and not in the membranous portion of the urethra. If the bulbous portion alone were ruptured, the urine would take the orthodox course described in the text-books. He believed that there was not only a rupture of the urethra, but also a rupture of the deep pelvic fasciæ or layers of the triangular ligament. The urine would not then take the typical course, and he thought it would be well to attend to this, as both extravasated blood and urine were apt to burrow deeply round the sides of the rectum and bladder.

Mr Bell was afraid that the shortness of his paper had prevented him making it thoroughly clear to Dr Cotterill. Rupture of the pelvic fascia might certainly occur without fracture of the pelvis, but he referred especially to cases where the rupture was extensive and accompanied by rupture of the urethra. He agreed with what Mr Duncan said regarding the effects of extravasated urine. He did not wish to push his method of treatment by aspiration in cases where a catheter could be passed. He only recommended its adoption in cases where the surgeon failed to pass the instrument. He was much interested in what Mr Symington had said regarding the position of the rupture. His own experience was purely practical, and he thought the seat of rupture depended a good deal on the position of the patient when he received the injury. In most cases he had seen the extravasated urine taking the typical course.

V. *Dr Cadell* read a paper ON THE TREATMENT OF SYPHILIS, which appears at page 495 of this Journal.

Mr Duncan remarked, in reference to the first paper, that it did not lend itself to criticism. He could not say the same of the second. The general scope of the paper was one with which they could thoroughly agree. The general method of treatment they would be inclined to follow to a certain extent. Dr Cadell's statements were deserving of most careful consideration, as coming from one who has given a great deal of attention to the subject. At the same time, Mr Duncan would venture to disagree with him on some points. He had put up a number of opinions with regard to the mercurial treatment of syphilis, and had knocked them over very satisfactorily; but Mr Duncan thought that most of them would agree that the essential fact remained that some syphilitic manifestations did disappear under the influence of mercury. Certain forms of skin eruption—those in the second stage especially, and many in the third—improved rapidly when mercury was given. All the rest was a matter of opinion. How far mercury was to be looked upon as an antidote no one could say, any more than they could how far iodide of potassium was to be considered an antidote. Mercury did good in certain manifestations of syphilis, so did the iodide; but that did not make them antidotes. He did not necessarily hold, nor did he maintain the opposite, that either shortened the course of syphilis. The question was, were the disadvantages of mercury so great, or its evils so manifest, that they should not use it in syphilis? He thought not. In large doses for a long time, no doubt, it had a bad effect. He had administered mercury in small doses for a considerable time without any bad effect. The experiments of Keyes and Van Buren with reference to the increase of blood-corpuscles were not altogether valueless. Whether this was a point of importance or not he was not prepared to say. Such, he thought, were reasonable views with reference to the administration of mercury. It was a fact that it improved the manifestations of syphilis, and that when cautiously administered there was no serious evil to deter its use. He was neither a mercurialist nor a non-mercurialist, but he should like to have mercury in his armamentarium.

Mr Joseph Bell would go, perhaps, a little nearer Dr Cadell's position than Mr Duncan did; but he could not go the whole way. His own experience was, that though many cases did well without mercury, there were also cases in which he dared not withhold that drug, more especially cases in which the eye was affected by syphilitic iritis. He should like to get from Dr Argyll Robertson his experience on this point. There were also cases of skin eruption in young men which no doubt would go away without mercury; but many of these patients had their business to attend to, and they wished the rash removed as speedily as possible. There was no doubt that mercury effected this quicker than nature; and as it did so without causing any serious evil, he felt it was right to give it.

Dr James Carmichael had been forestalled in a good deal he intended to say by the remarks of Mr Duncan. He would, however, like to refer to the use of mercury in a class of cases in which he was peculiarly interested, namely, the syphilis of childhood, congenital as it most frequently was. In these cases, when any local manifestation of the disease proved intractable and threatened the life of the child, he felt that he could not rightly withhold the administration of mercury. He would just mention nasal catarrh or mucous patches on the mouth and fauces, when they prevented sucking, and tended gradually to exhaust the infant, and ultimately, if not arrested in their course, cause death. In extensive and intractable skin eruptions the same thing held, that the only drug, so far as he knew, that would arrest the manifestation was mercury. He highly disapproved of mercurial treatment as a routine, as given with a view to cut short the disease, or upon the assumption that it was a specific. He believed that most cases of syphilis were much better treated without it, and in the manner well laid down by Dr Cadell; but he felt that when necessity arose, from local causes, of arresting the manifestations of the disease, mercury should be administered, for there could be little doubt—as little as about any fact in therapeutics—that this drug had a wonderful effect in regulating or restoring to the natural balance disordered local capillary action.

Mr Symington said that at the outset Dr Cadell ridiculed the idea of an antidote to special vital poisons, and, among them, to syphilis; but if they considered how little they knew of these poisons, and remembered the effect of certain drugs on certain such poisons, as quinine on ague, and the effect of vaccination on small-pox, he thought they would agree that Dr Cadell was assuming too much when he said there was no antidote to syphilis. It was unscientific to say that there never would be an antidote. Again, Dr Cadell, in his paper, was always referring to the treatment of syphilis on general surgical principles, by which he supposed he meant ordinary methods of dressing, giving tonics, and such like. In the later stages, however, he gave large doses of the iodide of potassium. He would like if Dr Cadell would tell them how the iodide acted on general principles. His own impression was that they knew little or nothing about it.

Dr Argyll Robertson had not intended to speak, had he not been asked for his experience with regard to some of those inflammations of the eye connected with the secondary manifestations of syphilis. His experience was partly that of the mercurialist, partly that of the non-mercurialist. In iritis he had no hesitation in saying that cases did occur in which, all other methods of treatment failing, the judicious administration of mercury certainly did good. In all inflammations of the eye he tried to avoid the use of mercury, because he felt that if it were injudiciously given, or without good cause, disastrous effects might be produced, and therefore, unless good cause was apparent, it was better to withhold it. He treated all cases at first on ordinary general principles, and by suitable local remedies. But, such measures failing, he had no hesitation in giving mercury. He had noticed in obstinate cases of syphilitic iritis that whenever the system became affected by the mercurial there was an immediate improvement in the syphilitic manifestation. He might add that in the eye they had sometimes an opportunity of studying some of the tertiary manifestations of syphilis, *e.g.*, syphilitic retinitis. There he found that mercury in small doses, as well as the iodide, did good.

Professor Simpson began his practice as a very definite anti-mercurialist, as did most of the students of Bennett and Syme. These two men taught that syphilis was to be treated and cured without the administration of mercury in any form. His experience of the disease was in great measure confined to the manifestations of it in young children, in pregnant women, and women affected through the ovum. In these cases he began cautiously and reluctantly to administer mercury, and soon came to the conclusion that one was not always justified in withholding it. There were cases of thickening of the pelvic organs where the usual antiphlogistic remedies were given without producing a good effect, and if there was a syphilitic taint he found that a mercurial soon began to effect an improvement. There was no doubt, also, that in the syphilitic diseases of children mercury was often of decided benefit. To his mind the most valuable paragraph of Dr Cadell's paper was his last, and it was worth the while of the Society to take up and face the question of extending the principles of a Contagious Diseases Act to men. He supposed all of them had seen distressing cases where a man affected with syphilis had married a young, healthy woman, bringing her into a most deplorable condition; and if children were born of the union they were generally, in the poorer classes at least, a burden to the community. For his own part he was ready to follow Dr Cadell in this new crusade.

Dr Miller was sorry that he must add one to the number of those accumulating against Dr Cadell. Holding the position he did of surgeon to the Lock Hospital, it might be expected that he should say something on this subject. He had listened with very great pleasure to Dr Cadell's paper, and his disappointment was that it was so short, as there were a number of important points on which he had not touched. He had noted one or two things he wished to refer to. The main point was the treatment of syphilis by mercury. He thought that on this point Dr Argyll Robertson had given valuable information, and had really hit the nail on the head. The question was not whether mercury was an antidote to syphilis, but whether it did any good. There was no doubt that it did in some of the manifestations of syphilis, and therefore it could not always be withheld. Very little, he noticed, was said of iodoform. Among all the substances recently brought forward for the local treatment of syphilitic manifestations, he had not got such good results as from it. He was in hopes that Dr Cadell would have told them something of the value of the iodide of potassium in the different stages of syphilis. His own experience was that it had no action, or next to none, in secondary syphilis, except in one particular class of cases, where there was severe periosteal pain. He found the iodide very useful in gummata, where he gave it in large doses with exceedingly good effect. He hardly ever blistered gummata now, as he found the iodide in most cases alone sufficient to remove them. With regard to the statement that mercury ought not to be given to those who were debilitated, he might say that most of his patients came to him in a miserable, debilitated condition, and he had never found mercury, when properly given, do harm, but rather good. He was glad to notice that Dr Cadell, like the majority of practitioners, disapproved of alcoholic liquors in the treatment of syphilis. As all were agreed that syphilis was a debilitating disease, and that tonic treatment was necessary to enable the patient to contend with it, the non-use of alcoholics was tantamount to a declaration that they are not tonics. This was quite his opinion, and he consequently never administered alcoholics in the Lock Hospital, though the majority of his patients were accustomed to take them, often in large quantities, before admission.

Dr Finlay had one remark to make. It seemed to be supposed that the non-mercurialists totally denied the value of mercury in syphilis. They did not. They acknowledged that it did a little good, but they held that the bad effects from it outweighed the good. In large doses, and prolonged, it certainly did a great deal of harm.

Dr Allan Jamieson would like to ask Dr Cadell if he had noticed whether tertiary symptoms appeared less frequently in cases treated on the non-mercurial principle than they did in cases treated with small doses of mercury. Von Bärensprung had stated that he could not express an opinion either way. He was not sure that tertiary symptoms were avoided any more by the non-mercurialists than they were by the mercurialists.

Dr Allan Gray said the title of the paper was, "On the Treatment of Syphilis." He thought it should have been, "On the Non-mercurial Treatment of Syphilis." He wished to ask Dr Cadell's opinion on the compound sarsaparilla decoction which the Englishmen were vaunting so much. As to antidotes for vital poisons, there were none except possibly for splenic fever, though sometimes we heard of them for hydrophobia. But if quinine did good in ague, ammonia in cases of snake-bite, and other drugs acted well in diseases which were manifestations of some vital poison, he saw no reason why mercury should not be given in syphilis, as there was no doubt that many of the syphilitic manifestations were improved by it.

Dr Cadell, in replying, said that in his experience syphilis, when treated on the non-mercurial plan, ran a shorter course than when mercury was administered. Tertiary symptoms were also very rare indeed in his practice, and he usually never saw them except where mercury had been given. So far as antidotes were concerned, the examples selected were somewhat unfortunate. Quinine was not an antidote to malarial poisoning, and vaccination was not an antidote to, but a preventive of small-pox. It was not given after the poison was received into the blood. He thought Dr Robertson could not, notwithstanding his remarks, have very much faith in mercury, else he would use it much earlier than he did in cases where the consequences of disease might be very serious to so delicate and important an organism as the eye. As to the compound decoction of sarsaparilla, he considered that as much ditch-water would be of equal benefit.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Chian Turpentine in the Treatment of Cancer.—A patient of mine had cancer of the mouth, in regard to the diagnosis of which there existed not the least doubt. I procured for her a pound of the emulsion of Chian turpentine, which she commenced taking on 1st January last. This finished, she procured more of the same, and has now consumed three pounds. When she commenced this treatment the fœtor was intolerable, the pain very severe, and the disease making rapid and steady progress. In a few days the fœtor was very much diminished, and improvement in this regard continued until the smell almost entirely disappeared. The pain also diminished very materially, and for a time the swelling diminished and the appetite improved, raising the hopes of both patient and friends. After a time, however, dislike for the emulsion supervened, and gastric disturbance followed each dose. The emulsion was, under these circumstances, necessarily suspended; and although the pain and fœtor have returned, it is with considerably diminished severity. The general condition of the patient leaves little ground for the hope of her recovery; but this fact does not negative the other fact that Chian turpentine exerted a favourable influence over the course of the disease, and that it is as good a remedy, at least, in this disease as any heretofore tried; in my experience it is a better. I certainly had never seen a medicine before have such a direct influence over the morbid process.—John Binnie, M.D., *The Therapeutic Gazette*, July 1881.

GOA POWDER IN TINEA SYCOSIS.—Having a case of tinea sycosis, in which a solution of sulphurous acid and also the ung. hydrarg. nit. had failed to cure, I gave the comparatively new remedy, Goa powder, a trial. The result was a speedy cure. I have used it in two cases since with success. Epilation was necessary in one case of long standing where the beard was lifeless. The manner of using it was first to soften and remove the crusts by applying a flax-seed poultice, then using freely the following:—

℞ Goa powder, gr. xx.
Cosmoline, ℥j. M.

—*The Therapeutic Gazette*, June 1881.

PHYSIOLOGICAL ACTION OF "D'ANDA-ASSU."—It is to Dr Joseph Manuel de Castio that we ascribe the honour of the first researches into the physiological action of this remedy. This distinguished practitioner furnished to Dr Jones Hovene, the clinical professor in the faculty of Rio Janeiro, the occasion for these studies. In 1860 that professor had experimented with this oil in a case of hepatic cirrhosis with ascites, in doses of two spoonfuls in a cup of tea, resulting in six large evacuations. In 1878 similar results were obtained in another. After several experiments Dr Castio comes to the following conclusions:—1. That the oil, given in doses of 10 grammes, can only be given once without vomiting. 2. That the purgative effects are manifested three hours after absorption. 3. This dose produces three evacuations. 4. After absorption there are no symptoms of intestinal irritation. 5. That the oil can be employed in all cases where castor oil can be used, but with these advantages, the dose is smaller and the odour more agreeable. It is a fact that the adhesion of castor oil to the mucous surface of the fauces is one of the chief causes of its nauseousness. The fruit of the anda-assu is abundant in Brazil, and in greater quantity than the castor oil. The doctors who use it employ it altogether when an energetic cathartic is needed.—*The Therapeutic Gazette*, June 1881.

CASCARA AMARGA IN SYPHILIS.—Very few practitioners who have had any considerable experience in the treatment of syphilis, when the disease has made any great progress in affecting the various tissues and organs of the body, but have wished for some reliable vegetable agent with which to replace mercury. In the course of time various drugs have been proposed, used, and abandoned as unreliable, and recourse has again been had to mercury. During the last four years a new remedy has been repeatedly spoken of in medical circles in Baltimore, of which small samples were sent by Dr Froehling from Mexico, where he was then travelling. It consists of the bark of a tree which he describes as belonging to the picramniæ, and called by the natives cascara amarga, also Honduras bark. This remedy has been used by a number of my medical friends, and their success induced me to try it in the following cases, in which all my previous efforts had failed:—Mr C. B. L. contracted a chancre (true Hunterian) in 1868; was treated to mercurialization. The sore healed, and he was to all appearances cured, and no secondary symptoms had made their appearance up to 1869. Thinking himself free from the consequences of the disease, Mr L. married in 1870. In 1871 his wife gave birth to a healthy child, which lived two years, and died of scarlet fever. Shortly after this his wife gave birth to twins, a boy and a girl; the boy, feeble from its birth, died at the age of two months of an intestinal affection. Some time previous to the birth of these children secondary symptoms had made their appearance on the husband; his throat and gums were ulcerated, his hair fell out, eruptions on various parts of the body showed themselves, etc.; in fact, he filled the bill of a typical case of secondary syphilis. About six weeks after the birth of the twins symptoms of syphilis made their appearance on the body of the girl in the form of blotches and ulcerations, and shortly after the mother began to evince symptoms of syphilitic poisoning. The child is now five years old, and since her birth she and father and mother have been constantly under treatment, without any apparent benefit until about the middle of last December. About this time I received from Dr Froehling a few bottles of fluid extract cascara amarga (P. D. & Co.'s), with the request to try it in cases of syphilis. I at once placed all three, father, mother, and child, on the drug, giving the father 45 drops, the mother 35 drops, and the child 15 drops, three times a day. The tonic effects of the drug showed themselves in less than ten days, and all the three patients claimed and showed that they felt better. They have continued to improve, until now the mother is entirely free from all symptoms and traces of syphilitic poisoning. The father, in whom, as I stated above, all the secondary symptoms had in rotation made their appearance, and who, when in December last I placed him on the fluid extract of cascara amarga, was really a pitiable object to behold, has entirely recovered, with the exception of a slight eruption on the elbows, which, however, also shows signs of diminution. The child is, with the exception of a slight, almost imperceptible ozœna, entirely well. All three have gained flesh, and their general health leaves nothing to be desired. In these three cases no other remedy has been used, either internally or externally, since beginning with the cascara amarga, and their condition when beginning this treatment was such that it was as a forlorn hope that I undertook this treatment. In view of the above facts I think myself justified in crediting the cascara amarga with whatever good has been derived, and think this new remedy deserves a more extended trial. I have now several other patients who have been using it for some little time—not long enough, however, to have much to report, although all seem to be improving.

The first effect of the medicine seems to be a general toning up, increasing the appetite and digestive power. May it not be possible that by thus stimulating and invigorating the system the drug aids it in eliminating, destroying, or preventing the multiplication of the syphilitic poison, whatever it may consist of? Experiments with a view to determining its mode of action would perhaps throw some light on the nature of the syphilitic virus itself.—S. F. Coyner, M.D., *Therapeutic Gazette*, June 1881.

AMYL NITRITE.—Dr C. O. Chapin reports, in a recent work on *The Sympathetic Nerve*, an interesting series of experiments with this agent. It having been suggested that, if sleep is dependent on cerebral anæmia, amyl nitrite, which promotes the circulation in the brain, should awaken sleeping persons, Dr Chapin, with the aid of a nurse, carefully applied a few drops of the drug to the nostrils of ten or twelve patients who were sound asleep, and in every case they awoke in less than one, or at most in two minutes. This was repeated on several evenings and on different patients, but with uniform results. Lest it might be the odour of the drug, or the irritation of the fifth nerve, or his presence near the bed, he tried on other occasions bisulphide of carbon and oil of peppermint, but succeeded in awakening not a third of those on whom they were employed.—*New Remedies*, August 1881.

ERGOTIN IN ENLARGED SPLEEN.—Dr W. L. Barrett writes in the *Southern Practitioner*,—A girl for several months had suffered from intermittent fever. The spleen was greatly enlarged. I injected ergotin, four grains in solution, beneath the skin immediately over the spleen. Three days after I visited her, intending to repeat the injection, but to my surprise found the spleen had resumed its normal size. She is now well and suffers no more from that troublesome condition, an enlarged spleen. My friend Dr T. W. Roane has also used it with excellent results in a number of cases of enlarged spleen and liver, the result of malaria.—*The American Practitioner*, August 1881.

ERGOT IN THE TREATMENT OF ULCERS OF THE LEG.—After narrating nine cases of ulcers of the leg of large dimensions (*Cincinnati Lancet and Clinic*), Dr Meyerhoff recommends the subcutaneous injection of fluid extract of ergot as a method of relieving the troublesome affection. The injection of about five drops was practised every second or third day near the margin of the ulcer, in the midst of the enlarged veins and infiltrated tissues. The ulcers themselves were covered with a two per cent. lotion of carbolic acid, and the extremity enclosed in a flannel bandage. Eight injections were the largest number required in any case. The operation was followed by considerable pain, lasting from two to eight hours, but abscesses and other evil effects were never observed. Atrophy of the dilated veins ensued in all the cases, and a rapid and, so far as known, permanent cure resulted in every instance.—(*Med. Wochensch.*) *The American Practitioner*, August 1881.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

Aural Polypi and their Treatment.—Voltolini reasserts what he has already written, that in the treatment of aural polypi he prefers the use of the galvano-caustic. For the simple removal of the growth he uses a wire snare, cold if the polypus is soft; but if he finds it hard, he attaches the battery and burns it off by galvano-cautery. For future cauterizations of the base he always uses the galvano-cautery, and in this article gives a figure of the finely-pointed instrument he prefers.—*Monatschrift für Ohrenheilkunde*, No. 2, 1881.

Fracture at the Base of the Skull.—Shortly before admission, the patient fell a distance of twenty feet, and an iron column upon which he was at work fell with and upon him, striking him on the head. He complained of pain in the right temporal region, was not comatose, but stupid, and bled from the right ear and posterior nares, there being a watery fluid mingled with the flow of blood from the ear. Facial paralysis of the right side, with impaired hearing, were the most marked symptoms in the case. The hæmorrhage continued for two days, at the end of which time the patient was able to recall the particulars of the accident, and gradually improved in general condition. The ear, however, continued to discharge a transparent yellowish fluid, and a rupture of the membrana tympani was distinctly discernible. The fluid was examined and concluded to be cerebro-spinal. Six weeks after the accident the man was discharged from the ward, and subsequently treated as an out-patient. The ear continued to flow, the discharge becoming purulent, and gradually ceasing under the use of zinc instillations and inflation of the middle ear. After recovery the vibrating tuning-fork upon the forehead was heard much better in the affected ear. The facial paralysis and the general symptoms gradually disappeared. This case suggests the importance of a careful and skilled examination of the ear in supposed fracture of the base of the skull, where the ear is implicated. The symptoms in this case, so far as can be judged from a report, would have been fully explained by injury to the middle ear alone, the free and continued watery discharge being in itself no evidence of implication of the cranial cavity. In default of the possibility of chemically determining the distinction between the cerebro-spinal fluid and the serum so copiously and continuously poured forth in cases of extreme congestion of the mucous membrane of the tympanic cavity following injury, the careful, expert examination of the ear is imperative.—Prof. George Buchanan's Wards, Glasgow, *Glasgow Medical Journal*.

A DISINFECTING CAPSULE FOR THE ORDINARY AIR-DOUCHE.—To diminish the risk of infection from the use of the balloon in different patients, it is suggested that the air be filtered by passing through a hollow globe attached to whatever form of apparatus is used, the interior of this globe being filled with disinfecting substances.—Zaufal, *Archiv für Ohrenheilkunde*, vol. xvi.

R. MALLING-HANSEN, *Forslag om at oprette et Dörstumme-Institut i Jylland*, Köbenhavn, 1880 (Plan for the Creation of an Institution for Deaf-mutes in Jutland); L. W. Salomonsen, Oprettelsen af et Dörstumme-Institut i Jylland, *Ugeskrift for Läger*, R. iv. Bd. I., 174.—Malling-Hansen, the director of the Royal Institute for Deaf-mutes in Copenhagen, has proposed the erection of a government institution in Jutland for instruction of one hundred, and boarding of thirty to fifty deaf-mutes. To this institution should be admitted every year the different deaf-mutes of eight years of age; and, after a certain term of probation, such deaf-mutes as would show aptitude to learn speech should remain in the Jutland institution, where the method of visible speech should be taught, while the others should be transferred to the institution in Copenhagen, where the methods of signs would be followed. Salomonsen, in his article, gives a short report of the development of instruction of deaf-mutes in Denmark. He favours compulsory education for all deaf-mutes, and separates them into real and unreal deaf-mutes, and agrees with the preceding author in that a large proportion of the deaf-mutes proper (nearly fifty per cent.) can be taught by methods of speech.—Referred to by John Möller, in *Nordikst Medicinkst Archiv*, xii. No. 3; J. J. B. V., *American Journal of Otology*, vol. iii. No. 3.

DIABETIC OTITIS: Clinical Lecture at La Charité, Paris (by Maurice Raynaud, Member of the Academy of Medicine).—The opinion expressed in this clinical lecture is that diabetic otitis is not only more frequent than is supposed, but that when it has once become well known it may prove a pathognomonic index, like anthrax, diffuse phlegmon, and certain erythematous eruptions about the genitals, and arouse the suspicion of the presence of this disease, hitherto unsuspected. In a case of well-marked diabetes mellitus, in which an attack of anasarca was diminishing, there suddenly occurred one evening, after the patient had been in the hospital a fortnight, a violent attack of pain in the right ear. There was no assignable cause, no chilling, to account for this. The pain became intense in the extreme, and toward midnight of the evening when attacked there occurred an abundant hæmorrhage from the right auditory canal, which was followed immediately by relief. The next morning there ran from the ear a copious sero-sanguinolent fluid, which flowed steadily drop by drop to such an extent as to require to be caught in a vessel. This discharge continued for several days, the liquid growing paler, until it became serous. Under the microscope it showed leucocytes, which collected in small quantity at the bottom of the vessel; and it contained albumen, as shown by heat, but no sugar. By examining the fundus of the canal with the otoscope, it was seen that the membrane was covered with a whitish exudation, pseudo-membranous in appearance, and in its upper part the fluid was seen to come through a small perforation. There was deafness on this side. In ten days the discharge ceased, until it became a mere moisture, which, however, persisted until the death of the patient, twenty-three days after the attack of earache. The petrous bone was examined post-mortem by Dr Landreit de Lacharrière, who discovered a large perforation in the anterior segment of the membrana tympani; red, fungous, and bleeding mucous membrane in the drum-cavity, in which there was a pink and purulent liquid. The bones of the ear were not dislocated, but they were embedded in the granulations, and near the stirrup there was a clot of blood. The mastoid cells were filled with a rose-coloured liquid containing pus-cells, and the mucous membrane lining the mastoid cells was red and softened. The osseous substance was greatly injected, marbled at some places, and presented all the appearances of inflammation of bone-tissue. The vestibule, the cochlea, and the semicircular canals showed no alterations. The ostitis in the mastoid is dwelt on as the sign of greatest importance, for the writer concludes that ostitis in the petrous bone is a peculiar and constant characteristic in diabetic otitis, though the latter may not pass beyond the mucous membrane.—(*Annales des Maladies de l'Oreille, etc.*, March 1881), *American Journal of Otology*, July 1881.

NERVE-ATROPHY IN THE FIRST COCHLEAR CONVOLUTION.—A case of great interest in pathological physiology is here described. A man aged sixty-three suffered from disease of the brain, and the clinical diagnosis was hemiparesis lateralis sinistra from a cortical affection of the right central convolution. The autopsy showed carcinoma of the anterior central convolution, and also carcinoma of the stomach. The patient was extremely deaf, the voice not being heard at all on the right side, and at a distance of three metres only on the left side. Two weeks before death, an examination of the ears showed normal appearances, but testing proved that the perception for high tones was entirely lost.

Tuning-forks from the forehead gave as follows:—

$a' = 440$ was perceived.
$c' = 264$ „ right.
$c = 132$ „ „

Tuning-forks by air-conduction gave:—

Right.	Left.
$a = 440 = 0.$	$a' =$ barely heard.
$c' = 264 = 0.$	$c' = 0{\cdot}05$ metre.
$c = 132 = 0{\cdot}01$ metre.	$c = 0{\cdot}01$ „

Microscopic examination of the right labyrinth showed that the central termination and the trunk of the acoustic nerve were generally normal, but contained a few atrophic fibres. A further examination of the different convolutions of the lamina spiralis proved that the nerve fibres in the two upper convolutions were perfectly normal, while those in the first or lower convolution had undergone a very marked quantitative atrophy. The hair-cells were similarly affected, the inner ones of the first convolution showing only a finely granular, molecular, colourless mass; the cells in the second convolution were nearly normal, while those in the third were absolutely so. The cause of the disease—a nerve-atrophy from inactivity or intra-labyrinthine pressure produced by fixation of the stapes, as argued by the authors—we cannot accept as proven; but the loss of perception for high notes, associated with the nerve-atrophy of the lower cochlear convolution, is a pathologico-histological demonstration of Helmholtz's theory of tone-perception very unique and of great interest. As is well known, from the laws of the transmission of vibrations, and the study of the structure of the labyrinth, Helmholtz concluded that the cochlea was a stringed instrument with strings of graduated variable length, the longer corresponding to the lower tones, and the shorter to the higher tones; and as, from the measurements of Hensen, the radial length of the lamina basilaris membranacea increases from below upward to the cupola of the cochlea, the lower convolution of the cochlea is adapted for the perception of the higher notes. The functional test in this case, in connexion with the pathological condition of the first cochlear convolution, is in full harmony with this theory of Helmholtz.—Moos and Steinbrügge, *Zeitschrift für Ohrenheilkunde*, vol. x. No. 1.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

REMARKABLE CHANGE IN THE COLOUR OF THE HAIR FROM LIGHT BLONDE TO BLACK, IN A PATIENT WHILE UNDER TREATMENT BY PILOCARPIN.—Dr Prentiss of Washington relates the case of a blonde, aged 25, who first suffered from acute, then chronic, cystitis, due to prolonged retention of urine. The inflammation gradually extended to the kidneys, pyelitis became developed, and finally extreme uræmic symptoms. For the relief of these latter, hypodermic injections of hydrochlorate of pilocarpin were administered, the dose being at first one-sixth, latterly one-third of a grain. Between the dates of December 16th, 1880, and February 22nd, 1881, twenty-two "sweats" were produced. The action of the drug was carefully observed. Immediately, almost before the

needle was withdrawn, the face and neck would flush up bright red, and dimness of vision be noticed. This was shortly followed by palpitation. In three minutes slight nausea, eyes, nose, and mouth beginning to water, and skin showing moisture; in seven minutes, free vomiting, profuse sweating and salivation. The action of the drug lasted from four to six hours, and this was increased when hot packing was conjoined with the pilocarpin. The hair in November 1879 and November 1880 was a light blonde with a yellow tinge; in January 1881, a chestnut brown; in May 1881, almost a pure black. Since the use of the pilocarpin the growth of the hair has been more vigorous, and is thicker than formerly. There was a corresponding, though less marked, change in the colour of the hair over the rest of the body. The alteration in the colour of the hair was first noticed twelve days after the use of the pilocarpin had been begun. It is well established, the author remarks, that jaborandi increases the nutrition of the hair, stimulates its growth, and renders it thicker. Dr Weinlander, from the examination of museum specimens of birds, was led to the conclusion that change of colour in their feathers was due to increase or diminution of oily matter. The fresh feathers were examined from the breast of a merganser, and the red colour found to be due to numerous laminæ filled with a reddish oil-like fluid. When dried the feathers bleached, and it was then found that the laminæ were filled with air only. According to this theory, an increase of nutrition would have a tendency to darken the hair, and *vice versâ*. This is borne out by the fact that dark and black hair is almost always thicker and coarser than light hair, and also by the change in hair to gray and white as age advances and the processes of nutrition become enfeebled. So, when the hair is thin, shaving the scalp will generally cause it to become thicker, firmer, and darker. This can only be through the influence of nutrition. Another instance is also given where pilocarpin was given to a child of fourteen months for six days for membranous croup. Recovery took place, and a distinct though not great deepening of the colour of the hair occurred.—*Philadelphia Medical Times*, July 2nd and August 13th, 1881 (Reprint).

HISTOLOGICAL RESEARCHES ON FAVUS AND THE TRICHOPHYTON.—In this paper, which contains a good description of the mode of growth and the best means of examining the fungus of favus and tinea tonsurans, Balzer offers an explanation why the mycelium is most abundant in the epidermic scales, the spores in the hair. On the scalp the spores form with ease, and under cover in the interior of the hair, while on other parts, the tubes being unceasingly thrown off with the scales, their contents have not time for perfect development and to terminate in the formation of spores. "However it may be, this predilection for sporeless vegetation in the hair must be borne in mind. It is one of the fundamental characters in the history of the trichophyton."—*Archives Générales de Médecine*, October 1881.

TINEA VERSICOLOR.—Bulkley communicates some interesting facts with regard to this. He prefers the name tinea to pityriasis versicolor, as, though the latter well indicated the scaly character of the disease, the former allies it with the other vegetable parasitic diseases. Liver-spot, again, is inapplicable, since there is no connexion between liver disturbance and this disease, while chloasma represents an entirely different eruption, a derangement of the pigmentation of the skin wholly independent of any parasitic or other discernible local cause. It is not a very common eruption, since it is met with only in about one per cent. of all skin diseases. Its more frequent occurrence in phthisical patients, or those affected with lung disease, may be explained by the fact that the chests of these patients are most often exposed to inspection; also because they are apt to be kept warm and moist, which states favour the growth in the skin of the parasite. To these may be added the lowered state of vitality of these patients, and the absence of thorough and repeated cleansing. It seems to be less common in females than in males. While its characteristic seat is the chest and back, it is by no means limited to these parts. Sometimes it will appear first on other regions, and occasionally the patient will first notice it when it has reached an exposed portion, as the neck or forearms. Not unfrequently it will spread on to these parts, and the eruption first presented for inspection and diagnosis will be located here, or even on the wrist. Again, it is not always found in large patches on the chest, as commonly described. Cases continually occur where the entire eruption is disseminate, covering often a very large surface of the body more or less thickly. In one case related, most of the surface of the back was covered with a disseminate eruption, much of it being in very minute spots, each surrounding a hair follicle. Under certain circumstances the eruption may become very much irritated and reddened, so that the diagnosis is much obscured. In one case the eruption, which occupied the upper portion of the chest and back, consisted of small discrete spots, brownish or dingy red, slightly elevated, and scaly, showing some marks of scratching. On pressure the redness disappeared, leaving the usual fawn colour. Under the use of sulphur vapour baths, with subsequent inunction of vaseline containing ten grains of carbolic acid in the ounce, in a week the eruption had paled greatly. The eruption is most commonly mistaken for a syphilide, particularly if there should co-exist a urethral discharge, leading to an examination of the skin and discovery of the parasitic disease, which had previously been unnoticed. It may also be confounded with seborrhœa of these regions, which appears on the chest and sometimes on the back in the form of circles, which may run together.

But here the colour is much more red, the surface more greasy and not so even; the outer portions are much more prominent, and the interior faded. A very curious case of tinea versicolor was reported some time ago by Dr Taylor of New York. The eruption was of a bluish colour instead of yellowish brown, but resembled the disease under consideration in its other features, its symmetrical distribution, slight scaliness, etc. The blue stain was found to be due to iodide of potassium which the patient was taking, it being eliminated by the skin, and the iodine there combining with the starch of a laundried shirt which he wore next to his skin. The loosened scales of the patches absorbed the blue colouring matter produced, thus giving the peculiar hue to the eruption. —*Archives of Dermatology*, July 1881.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By J. Milne Chapman, M.B., M.R.C.S.

The Mucous Membrane of the Uterus at the different Times of Life and during Menstruation, by R. Möricke (*Zeitschrift f. Geb. u. Gynäk.*, Bd. vii. Hft. 1).—In this paper the author repeats, and adds to, the substance of his paper in the *Centralblatt*, No. 13, of last year, on "The Behaviour of the Mucous Membrane of the Uterus during Menstruation;" but to make the subject clearer, he enters into a lengthy description of the histology of the inner coat of the uterus at various periods of age. His method of obtaining specimens for examination during menstruation was to use the curette daily from a day or two before to a day or two after menstruation, and he says that he never saw any bad results follow any of his experiments. He summarizes his results as follows:—

I. *In the New-born Child.*—1. The cylindrical epithelium is devoid of cilia; in most cases it extends quite to the os externum, though occasionally the pavement epithelium of the cervix passes up some distance into the cervical canal. Between the cylinder cells in the cervix are situated mucous or "goblet" cells, but these are not found in the body. 2. In various ways (*vide* original) the epithelium of the cervix may be distinguished microscopically from that of the body. 3. The round cells of the interglandular substance in the cervix are decidedly larger than those in the body. 4. Glands are to be found in the whole of the cervix having the appearance of round, hollow depressions with overlapping edges, and here and there a few tubular glands. 5. In the body there are tubular and branched glands, the latter occurring at the fundus. 6. The uterine mucous membrane has a base membrane; the glands have a membrana propria.

II. *In Adult Life.*—1. The cylindrical epithelium is covered with cilia, which can be followed deep down into the glands. 2. In the cervix, in addition to the tubular glands, there are scattered here and there some bottle-shaped glands. 3. The glands have a membrana propria, which has the appearance of a homogeneous clear pellicle.

III. *In Old Age.*—1. The epithelium in old age loses its cilia. 2. The epithelium and interglandular cells diminish in size, while the connective tissue increases. 3. The glands of the cervix disappear, while those of the body are changed into small cysts.

IV. *During Menstruation.*—1. During menstruation the mucous membrane of the uterus is neither entirely nor yet partially shed; more than that, it possesses throughout the whole process its ciliated cylindrical epithelium. 2. The interglandular cells are neither increased in numbers nor in size, and fatty degeneration is never perceptible even to the slightest degree. 3. The vessels increase in lumen and become distended; extravasations occur in the upper layers of the mucous membrane; the homogeneous base structure undergoes a constant increase in quantity.

HYDROCELE IN THE FEMALE, by Wm. Will, M.D. (*American Journal of Obstetrics*, No. 3, 1881).—The writer has made an exhaustive search through all available literature from the fourteenth century to the present time, and finds little mention of this disease. He gives two cases, the diagnosis being verified by the introduction of an exploring needle. In one iodine was injected with a successful result; in the other it was tried to set up adhesive inflammation by forcible manipulation, but suppuration resulted, and the sac had to be laid open. According to Schröder, quoted from Ziemssen's *Cyclopedia*, there are two varieties—the intra-peritoneal, where there is a processus vaginalis peritonei extending through the inguinal canal to the mons veneris, and an extra-peritoneal, developing in or around the round ligament.

PREGNANCY, PARTURITION, AND CHILDBED AMONG PRIMITIVE PEOPLE, by G. Englemann, M.D., St Louis (*American Journal of Obstetrics*, No. 3, 1881, p. 602).—This paper is to a great extent a *résumé* of the series of ethnological studies of woman in relation to the process of reproduction which have appeared lately from the author's pen in various American publications. It consists in a collection of customs prevalent among various tribes, principally among the North American Indians, with explanations of their objects and results, and proves most interesting reading. He shows how rare criminal abortion is among savage tribes, and how this is not to be attributed to inability on their part to procure it, as one tribe, for instance, use the leaves of a certain plant tightly rolled up and inserted into the cervix, exactly as tents are used, with the object, however, of facilitating labour at term by dilating the neck of the womb. He says that criminal abortion is common among some of the Indians on account of the difficult labour which endangers the life of the woman bearing a half-breed child, which is usually so large ake its passage through the pelvis of the Indian mother almost an impossibility. He attributes the easy labours among savages to the following causes:—*1st*, They marry only their kind, and thus the proportions of the child are suited to the parts of the mother; *2nd*, Their more healthy condition and vigorous frames; while, *3rd*, From the active life they lead, head or breach presentations result.

THE PRACTICE OF OBSTETRICS AMONG THE CHINESE, by R. Harris, M.D., Philadelphia (*American Journal of Obstetrics*, No. 3, 1881, p. 570).—This paper may be well read along with the foregoing. The writer gives extracts from the standard Chinese work on midwifery to show how grossly ignorant of the subject the people are, and then mentions the work going on at some of the Medical Mission stations in China. He says that China and Japan offer a promising field for female medical practitioners, some of whom have already proved very successful here.

COMMUNICATION ON THE TREATMENT OF UTERUS-RUPTURES BY DRAINAGE, by Dr J. Mann, Buda-Pest (*Centralblatt f. Gynäk.*, 1881, No. 16).—The method of treatment so strongly recommended by Frommel, and already reported in the *Journal*, was successfully carried out in this case as follows:—A drainage-tube with a cross piece was passed through the rupture, but the outer end of it was kept closed for twenty-four hours. When it was opened, some stinking discharge was evacuated, and a two per cent. solution of carbolic acid injected. This was repeated twice daily till the fifth day, when the drainage-tube was pushed out. The vagina was packed round the tube with carbolized cotton.

AN ACCOUNT OF 110 CONSECUTIVE CASES OF ABDOMINAL SECTION, by Lawson Tait (*Birmingham Med. Times and Gaz.*, Nov. 5, 1881).—These cases were performed in the year from 1st November 1880. The following is an analysis of the series:—

		Cases.	Deaths.
Exploratory incisions,		14	0
Removal of one ovary for cystoma,		38	2
Removal of both ovaries for cystoma,		9	0
Removal of parovarian cysts,		4	0
Removal of both ovaries and tubes for	Myoma,	11	1
	Hydrosalpinx,	5	0
	Pyosalpinx,	3	0
	Chronic ovaritis,	2	1
Opening and draining of pelvic abscess,		11	0
Hepatotomy,		4	0
Enterotomy for intestinal obstruction,		2	0
Hysterotomy,		4	2
Cæsarian section,		1	1
Extra-peritoneal cysts (peritoneum not opened),		2	2
		110	9

In speaking of exploratory incisions the writer says, "They serve the purpose of complete tappings, and as the patients uniformly recover they do no harm at all." His death-rate in ovariotomies (3·49 per cent.) he claims as second only to that of Dr Keith. In regard to the use of antiseptics, he considers it as finally dismissed from use in abdominal surgery, and predicts a speedy similar fate for it in general. He says of it, "I take to myself some credit for having burst one of the largest, best-blown, and most attractive bubbles ever displayed to a surgical audience." He recants his former views about drainage, and agrees with Keith that it will save three or four cases in each hundred. He greatly objects to the term "septic peritonitis," and urges that the suppurating peritoneum should be treated on the same principles as other suppurating cavities. To quote from him, "The next case of peritonitis to which I am called, of whatever sort it be, even puerperal, I shall advise and perform, if allowed, abdominal section, shall cleanse out the cavity, and drain it."

FOUR CASES OF HEPATOTOMY, by Lawson Tait (*Birmingham Medical Review*, Oct. 1881).—Case 1 was for hydatids. Healthy liver tissue from ¼ to ¾ inch thick was cut through, and 2 gallons of fluid and small cysts scooped out with a gravy-spoon. The cut edges of the liver were secured in the abdominal incision, a drainage-tube inserted, through which the cavity was repeatedly washed out. Recovery was complete. Case 2 was for abscess, the cavity occupying nearly the whole substance of the liver, and containing 7½ pints of pus and bile. Recovery was complete. Case 3 resembled Case 1. Case 4 was a monolocular hydatid cyst covered by 1 inch of liver substance. Recovery was also complete.

OBSTETRICAL EXPERIENCES.—Dr David M. Williams of Liverpool, in an abstract of 2500 confinements "chiefly among the comfortable middle classes," states that he considers the forceps a great boon, always to be used with comfort and safety, without injury to the mother, and in only one case did he find craniotomy necessary. For over twenty years he has introduced the forceps into the uterus, often saving the child by that means, when the os was very narrow, but dilatable. He had only employed chloroform in the first stage to overcome rigidity; in the second stage he often administered it till complete unconsciousness was produced, believing that the perinæum may thus be frequently saved from rupture, an accident which will sometimes occur after every precaution. He has cured a complete rent, involving the sphincter, without operation, by rest, local cleanliness, and the induction of temporary constipation by opium. He trusts in ergot especially as a preventative of flooding in cases where the pains are weak and the intervals long. He denies, on the evidence of distinguished travellers contrasted with the records of contemporary British practitioners, that puerperal mortality is the result of civilisation. The truth is quite the other way, and by acting on increased knowledge more lives will yet be saved.—*British Medical Journal.*

Part Fifth.

MEDICAL NEWS.

M'ALPINE'S ZOOLOGICAL ATLAS.

IN the month of July last we reviewed a "Zoological Atlas" by a Mr D. M'Alpine. In the course of what we esteem a favourable notice of that work, we expressed our opinion that the author had exhibited no pretensions "to originality of matter or style," and that most of the cuts had been drawn or taken from "recognised authorities." This opinion we deemed then, and still think, not merely just, but favourable to Mr M'Alpine; and at the close of our review we remarked that the Atlas, apart from certain defects duly detailed, would serve a useful purpose in the practical study of natural history. After a lapse of four months, however, our opinions seem to have awakened in Mr M'Alpine's mind a sense of offence; and we may at the outset remark that we are extremely sorry to have given that gentleman cause for mental perturbation.

In a letter dated November 3rd, from "Polwarth Gardens" but bearing the heading of the "Royal Society of Edinburgh" (of which Society, however, it does not appear that Mr M'Alpine, is a Fellow), this gentleman demands an "ample apology and correction" from us, on the grounds that our statement is "entirely false," and that the cuts in his work are (with three exceptions) "original." How our statement becomes "entirely false" when even three of Mr M'Alpine's cuts are admitted to be "borrowed plumes," may not perhaps be as clear to that gentleman as his unmannerly style of remonstrance will be obtrusively plain and evident to other people. Mr M'Alpine's reasons for his claim of originality are founded on a statement that he has the "original drawings" in his possession. Our ground for stating that Mr M'Alpine's cuts were taken from "recognised authorities," was based on the plain fact, that to all appearance the vast majority of his illustrations reproduce, often with exactitude, the figures familiar to every student of zoology, not merely in the text-books of to-day, but in those of past years also. There is a close likeness, also, in many of Mr M'Alpine's illustrations to the diagrams which South Kensington students are accustomed to make from their studies in practical biology under Professor Huxley—an opinion expressed in our review, but of which our querulous author, perhaps conveniently, takes no note. Now, unless Mr M'Alpine is a person who imagines that a reviewer is not entitled to express any opinion at variance with the views of the author whose work he criticises, he will perhaps feel satisfied with the above explanation. But to further his understanding of our reviewer's position, it may be well to point out to Mr M'Alpine that the mere reproduction of an animal or structure which has done duty scores of times as a stock zoological illustration, does not constitute "originality" in any one's eyes, save, perhaps, in his own. For example, is his brain of a skate (Plate III.) (coloured yellow), entitled to be called an "original drawing" in the sense Mr M'Alpine maintains?—which sense, we may take it, is that of a copyright production. Is the tortoise (Plate XI.) so unfamiliar an object in any "popular illustrated natural history," that Mr M'Alpine, having drawn, or having had executed a drawing of that animal, is entitled to demand an instant recognition of "originality" as his due? Was the pectoral fin of a codfish (Plate VIII.) never depicted by anybody until Mr M'Alpine drew and designed it as a kind of "special creation?" Are the bones of a bird's wing such unfamiliar objects in the pages of Owen, Huxley, and others, that Mr M'Alpine must consider himself aggrieved by our reference to his following "recognised authorities?" Does Mr M'Alpine's drawing of a dove (Plate XIV.) give him a patent right in the artistic reproduction of pigeons? And is a pigeon's feather (Plate XV.) so thoroughly "original" an object in a zoological atlas, that we are to be subjected to a threat of "further proceedings" when we refuse to recognise Mr M'Alpine's claim to be the first and last person to depict that structure? The answers to these questions may, perhaps, put the meaning of Mr M'Alpine's claim to "original" work in a light hitherto undreamt of by himself. His sketches, indeed, may be "original," but it is hardly even the same kind of "originality" that a zoological lecturer might claim for the outlines he extemporizes on his blackboard. Had Mr M'Alpine's "Atlas" been like, say Rolleston's "Types," a series of illustrations, copied from actual dissections, representing exactly the anatomy of animals, and new alike to zoological and artistic science, we should have been delighted to have accorded a warmer welcome to his work. As it is, however, his "Atlas" consists largely of a series of outlines and diagrams, of which the chief "originality" is the brilliant coloration of things in general—together with a section of a "frozen rabbit,"—for our former remarks on the anatomical utility of which illustration, we are somewhat surprised Mr M'Alpine has not added a second threat of "further proceedings."

On the possession by Mr M'Alpine of the "original drawings" of the objects he depicts, we may only remark, that he must possess a considerable collection of figures resembling those in the possession of the authors or publishers of other zoological works —not to speak of the sketches which, as already remarked, students at South Kensington and elsewhere make of their dissections of cods, skates, tortoises, pigeons, and rabbits. Our author will, perhaps, be able to produce what is more to the point, namely, his whole series of "original" dissections, including that from which the figure of the mammalian skull (Diagram 1, Plate XXI.) was constructed. Perhaps a reference to Professor Flower's "Mammalia" will show him that his "original drawing," in this instance, bears a marvellous resemblance to one of Flower's cuts, drawn long before the appearance of the M'Alpine "Atlas." How would Mr M'Alpine care to hear us suggest that Professor Flower, in the matter of the skull-diagram in question, must possess an "original drawing," which, in point of time alone, must claim precedence of that in the "Atlas" under review? In conclusion, if it will afford Mr M'Alpine any satisfaction, we shall be glad to alter the criticism he complains of to the following declaration:—"There are no pretensions in the book to originality of matter or style, and most of the cuts in Mr M'Alpine's "Atlas" are either reproductions, or imitations of figures and subjects, which, for years past, have done duty in text-books as zoological illustrations; or are diagrams and outlines, which, from their brilliant coloration, exhibit a decided originality of conception and treatment."

UNIVERSITY OF EDINBURGH—MEDICAL AND SCIENCE DEGREES.—The following candidates have passed the first professional examination, Oct. 1881:—M. S. P. Aganoor, Alfred Aikman, M. S. Altounian, J. M. Balfour, M. M. Basil, B. K. Basu, James Bell, G. L. Bonnar, Frederick Bond, J. E. Bottomley, Paul Bowes, Herbert Bramwell, D. M. Brown, T. A. Brown, J. R. Burns, C. J. Burton (Science), J. M. Cadell, Henry Caudwell, Edward Carmichael, Thomas G. Churcher, E. W. Clarke, J. G. Cossins, A. H. Croucher, A. S. Cumming, Daniel Davies-Jones, Alexander Davidson, A. N. Davidson, D. R. Dow, Thomas Easton, Edwin Eckersley, George Fisher, J. W. Fox, A. E. Grant, Benjamin Griffiths, J. S. Haldane, P. B. Handyside, W. C. Helme, George Hewlett, W. H. Hill, Archibald Hood, T. A. F. Hood, Robert Howden, R. E. Horsley, C. W. Howatson, A. W. Hughes, B. E. Iastrzebski, David Jack (Science), R. Jackson, Hugh Jamieson, Hugh John, John Johnston, Thomas Johnstone, G. H. Kenyon, Henry Ker, Francis Kraemer, David Laing, W. S. Lang, A. W. M. Leicester, W. M. Little, H. J. Mackay, Wm. Mackay, F. L. M'Kenzie, J. H. M'Kenzie, N. J. M'Kie, John M'Myn, Archibald Macqueen, G. D. Malan, J. W. Martin, D. J. Mason, Angus Matheson, R. T. Meadows, Duncan Menzies, William Miller, Robert Mitchell, B. M. Moorhouse, A. E Morison, E. J. B. du Moulin, Daniel Mowat, W. J. Munro, J. H. Neale, J. H. Neethling, Sydney Partridge, Ian Paterson, M. G. Pereira, F. A. Pockley (with distinction), G. Y. Polson, H. P.

Prankerd, H. H. Pridie, Joseph Priestley, J. M. S. Preston, E. E. T. Price, A. C. Purchas, Alwin Raimes, T. R. Rait, C. A. Renny, John Rigg, G. M. Robertson, John Robertson, J. S. Robertson, T. H. Robinson, Joseph Rutter, A. O. Schorn, William Shand, John Simpson, George Smith, William Sneddon, Y. S. Snitwong, Arthur Solomon, J. C. Steedman, H. F. D. Stephens, A. J. Styles, H. J. Styles (with distinction), J. W. Stirling, J. M. Stormonth, G. H. H. Symonds, John Sykes, T. S. Tanner, J. C. Taylor, Thomas Taylor (Science), William Taylor, Andrew Thomson, D. G. P. Thomson, H. A. Thomson, J. A. Thomson (Science), Thomas Thyne, Alfred Turner, J. W. O. Underhill, David Wallace, David Walker, E. F. S. Walker, N. P. Walker, L. W. Watson, A. K. Watt E. G. Westenra, G. E. C. Wood, J. E. Wolfhagen, J. C. Young.

ANOTHER VIEW OF CONGRESS.

After a brief and sensible introduction by Sir William Jenner, delivered in a timid, clumsy way, the Prince of Wales read a few platitudes, and declared the Congress open. Then came a most eloquent practical address by the president, Sir James Paget, the delivery of which, in a beautifully clear, well-modulated voice, though marred by occasional awkward gestures, secured the close attention of the vast audience for three-quarters of an hour, after which the Congress adjourned for sectional work.

This work consisted, to an unpleasant degree, of twaddle by ambitious nonentities, who hoped to achieve immortality by appearance on the rostrum of the Congress, and who thereby wasted much valuable time in the reports of wonderful operations, in the description of wonderful apparatus, in the promulgation of wonderful views and theories. Yet several questions elicited real discussion, in which the leaders of medical and surgical practice put upon record their views of several still unsettled topics. It is flattering to our national pride, that we have produced not only the best horses, oarsmen, and pedestrians of the year, but that the palm for advances in surgery has been almost unanimously awarded to America. Lithotrity at a single sitting, involving often the use of a large catheter (29 or 30 Charrière) for evacuation, and the presence of instruments in the bladder for even two or three hours —in short, *Bigelow's* operation, received flattering testimonials from many, and marked approval from *all* speakers except Sir Henry Thompson. He objects to the use of the large catheter, which Bigelow insists is the essential feature of his operation, preferring to use a small lithotrite for the removal of the larger fragments. His friends are compelled to admit that, while this procedure may be safe and effectual in Sir Henry's practised hand, it might be quite different in that of the average surgeon ; while his enemies they are numerous in London) ascribe his opposition to personal jealousy of Bigelow. The latter's operation, therefore, while it may not effect, as the enthusiastic Teevan affirmed, a revolution in vesical surgery, is certainly the recognised and fashionable mode of lithotrity.

Emmett's operation for lacerated and everted cervix, although meeting far more vigorous opposition than Bigelow's, received the endorsement of all the representatives of the American gynæcological school, and of several among the English. Playfair, in particular, made a terse and witty speech narrating his conversion to Emmett's views, as based upon a case which he (P.) had "tinkered" with various caustics for several years, and which Emmet cured completely by a single operation. The operation will doubtless now receive at least a fair trial by the conservative English, few of whom have hitherto deigned to test it, as I was informed personally by Mr Wells and Dr Bantock.

The medical and pathological sections laboured for two days to determine the relations of renal disease to general vascular changes. Gull and Sutton attempted to force their "arterio-capillary fibrosis" heresy down the reluctant throats of the Germans; Geo. Johnson harped on muscular hypertrophy, as usual; Rosenstein gave an admirable *résumé* of the German views as to the pathology of the kidney; but when Grainger Stewart hove in sight with his interminable catalogue of imaginary "Bright's diseases," the writer fled. What the issue of the conflict was, I have not heard; but as the combatants were chiefly Gaels and Teutons, it is safe to assume that no conclusion was reached.

The sharpest discussion was that upon antiseptic surgery. Spencer Wells said that he had not used a drainage-tube in ovariotomy during the last three years. (I have heard him say that he meditates abandoning the spray.) Lawson Tait referred to thirty-six cases of unusual intra-peritoneal operations—removal of gall-stone, opening of hydatids of liver, cysts of kidney, abscesses of pelvis, section for Fallopian pregnancy, etc. But one patient died. In only a few cases had he attempted to use Listerian details, which he soon abandoned as cumbrous and impracticable, sometimes positively injurious.

Keith stated that after losing two ovariotomy patients by carbolic acid poisoning, he had renounced the spray, and had since had sixty-five cases without a death.

Savory, while complimenting Lister on the improvement in the sanitary condition of King's College Hospital, referred to the fact that antiseptic surgery, in Lister's own hands, could not show results as good as those by the old plan at St Bartholomew's.

On the other hand, Esmarch, Volkmann, and Czerny related wonderful improvement in the statistics of their operations since they had adopted Lister's method. In the Samaritan Hospital here Thornton had twenty-one cases of ovariotomy, with one death—all carefully Listered; his colleague, Bantock, shows a

ALEXANDER MACDOUGALL, Esq.

Every one who has known anything of the Edinburgh Royal Infirmary during the past forty-five years, will regret to hear of the death of that good old man who for a generation and a half was so faithful a servant of the corporation of managers, and so calmly sensible in his relations with the honorary staff.

After becoming a licentiate of the College of Surgeons in 1831, he was appointed apothecary to the Royal Edinburgh Infirmary in 1838, and subsequently in 1846 received, in addition, the appointment of treasurer-superintendent. The duties of these offices he continued to perform with unwearied zeal and devotion for many years, until in 1872 it was considered desirable that he should be relieved of a portion of them, the greatly increased labour in the Treasurer's office, due to the extended operations of the institution and to the erection of the New Infirmary, demanding all his attention. As Treasurer he continued the welfare of the institution and how to promote it the one thought of his heart, until in 1879, failing health and advancing years warned him that the time had arrived when in retirement he must seek rest. The necessity for his resignation being recognised by the managers of the Infirmary, they, in consideration of his long and invaluable services to the Infirmary, continued to him his full salary as a retiring allowance, and further, invited him to remain in the institution till the removal to the new buildings. He died on the 30th October 1881, to the regret of the many friends he had made during his long and useful life.

Mr Macdougall devoted considerable attention to microscopic work. He was rather a connoisseur in the instrument, and had collected a somewhat extensive assortment of preparations in natural history, many of which were mounted by himself.

Mr Macdougall was a son of the manse, his father having been parish clergyman of Killin, and his brother Patrick was well known as the wise and witty Professor of Moral Philosophy, first in the Free Church College and afterwards in the University of Edinburgh.

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C. B. Keetley, F.R.C.S.,—Index of Surgery. Smith, Elder, & Co., Lond., 1881.

J. L. Milton,—On Spermatorrhœa. Henry Renshaw, Lond., 1881.

G. V. Poore, M.D., F.R.C.P.,—Lectures on the Physical Examination of the Mouth and Throat. J. E. Adlard, Lond., 1881.

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